

Rock Products

DEVOTED TO THE PRODUCTION
OF ROCK AND ITS PRODUCTS

Vol. V. No. 2.

LOUISVILLE, KY., DECEMBER 22, 1905.

MANUFACTURED PRODUCT
AND CONCRETE EDITION.

SAND LIME BRICK MACHINERY NATIONAL SYSTEM

FINLAY SAND DRYER

CLAY WORKING MACHINERY

LIME HYDRATING PLANTS

NATIONAL BRICK MACHINERY CO., 817 Chamber of Commerce, Chicago

DRY UP YOUR TROUBLES

WITH OUR

Drying Machinery and Presses

THE BILES DRIER COMPANY

Both Long Distance Telephones

LOUISVILLE, KENTUCKY

Expert advice in Construction and Operation of

SAND LIME BRICK FACTORIES

PLANS, SPECIFICATIONS and PERSONAL ATTENTION GIVEN YOUR LOCATION BY

W. J. CARMICHAEL,

WELLSBURG, W. VA.

CAPACITY, 60,000 PER DAY.

UNION MINING COMPANY,

ESTABLISHED, 1841.

MANUFACTURERS OF THE
CELEBRATED

"MOUNT SAVAGE" FIRE BRICK

DEVOTE A SPECIAL DEPARTMENT

to the Manufacture of Brick particularly adapted both physically and chemically to
Lime Kiln and Cement Kiln Construction.

Large Stock Carried. Prompt Shipments Made. Write for Quotations on Standard and Special Shapes, to

UNION MINING COMPANY, Mount Savage, Md.

"Howard Cement"

IT IS NON-STAINING.

IT IS WHITE.

IT IS NON-FREEZING.

HOWARD CEMENT PLASTER the most perfect wall plaster made

Favor us with
your inquiries.

Howard Hydraulic Cement Co.

CEMENT.

GEORGIA.



Phoenix Portland Cement UNEXCELLED FOR ALL USES.

Manufactured by

PHOENIX CEMENT CO.

NAZARETH, PA.

Sole Selling Agent WM. G. HARTRAN, Real Estate Trust Building,
PHILADELPHIA, PENNSYLVANIA

"RELIANCE" BELT ABSOLUTELY BEST

FOR GRIFFEN MILLS
FOR TUBE MILLS
FOR BALL MILLS

Chicago Belting Company
MAKERS

67-69 South Canal Street,

SEND US YOUR SPECIFICATIONS.

CHICAGO, ILL.

THE QUEEN'S RUN FIRE BRICK CO.

Highest Grade
Shapes a Specialty.

LOCK HAVEN, PENNSYLVANIA



Dryers for Sand for Sand Lime Brick
ALSO FOR CLAY, COAL, ETC.

Write For Catalog P. R

American Process Company

62-4 Williams St., New York City.



MARQUETTE PORTLAND CEMENT

Gives Absolute Satisfaction for All Kinds of Concrete Work.

MARQUETTE CEMENT MANUFACTURING CO.,

MILLS: LA SALLE, ILL.

SALES DEPARTMENT: MARQUETTE BLDG., CHICAGO.

A bow legged man of Weehawken,
Said, "What is the use of this talkin'?"
If we used WHITEHALL cement,
Our legs wouldn't be bent
For we could use our sidewalks for walkin'."



ITS LIGHT COLOR AND POSITIVE UNIFORMITY INSURES COMPLETE SATISFACTION.

The Whitehall Portland Cement Co.

1719-1725 LAND TITLE BUILDING

PHILADELPHIA, PA.

172 E. Washington Street, CHICAGO, ILL.

141 Milk Street, BOSTON, MASS.

Century Building, ATLANTA, GA.



Manufacturers: Sales Office, Holland Building, St. Louis.



ONE GRADE—ONE BRAND.

The Recognized Standard
American Brand.

General Offices: EASTON, PA.

SALES OFFICES:

541 Wood, PITTSBURGH.

Builders Exchange, BALTIMORE.

Marquette Building, CHICAGO.

Harrison Building, PHILADELPHIA.

Builders Exchange, BUFFALO.

Board of Trade Bldg., BOSTON.

Park Row Bldg., NEW YORK.

The Best Portland Cement Is

"LEHIGH"



MANUFACTURED BY

**Lehigh Portland
Cement Co.**

ALLENTOWN, PA.

Write for Catalogue.

Capacity, 4,000,000 Yearly.

Tell 'em you saw it in ROCK PRODUCTS.

Chicago Portland Cement Co.



MANUFACTURER OF...

**"CHICAGO AA"
PORTLAND CEMENT.**

We make one brand only.

The best that can be made.





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Rock Products

DEVOTED TO THE PRODUCTION
OF ROCK AND ITS PRODUCTS

Vol. V. No. 2.

LOUISVILLE, KY., DECEMBER 22, 1905.

MANUFACTURED PRODUCTS
AND CONCRETE EDITION.

FINISHING

The Great Concrete Structure of Louisville.

Record Time in the Construction of the Belknap Building.—First of Its Kind in the South.

The largest reinforced concrete structure ever erected south of the Ohio river is rapidly nearing completion. This is the magnificent office building of the Belknap Hardware and Manufacturing Co., which is being erected at the corner of Second and Washington Streets, Louisville, Ky.

Buildings of this character are an entirely new feature of construction in the South, and the erection of this building has attracted considerable attention among architects and builders on account of the unique method of construction.

The dimensions of the structure are 125 x 190 feet, six stories and basement, veneered with face brick and trimmed with Bedford stone and terra cotta. The contract was awarded to Rommel Bros., local contractors, and the estimated cost of the building complete will be about \$180,000.00. Messrs. Rommel Bros. are to be congratulated on securing this large contract, as they had to bid against about twelve other concerns, and particular credit is due to the Belknap concern from the fact that they awarded the contract to local people.

The work on the building began on August 20, of the present year, and the first concrete column was set on August 28, at 4:30 p. m. The sub-contract for concrete construction proper was let to the Ferro-Concrete Construction Co., of Cincinnati, Ohio, and some record time has been made in constructing the building. The columns decrease from the first floor, where they are 20 x 20, to 8 x 6 inches on the sixth floor. The floor panels are 12 x 15-4, and the beams 6 x 15 x 15-4 in length. The area of the floor space is 22,500 square feet, with a retaining capacity of 300 pounds per square foot. Ransom rods $\frac{1}{4}$ to 1 inch were used as the reinforcing material which were bent in shape at the building in some cases according to design. There was no structural steel used throughout the entire building.

In the original plans, which were drawn by D. X. Murphy & Bro., Louisville, Ky., architects for the building, called for cast iron columns and wooden beams and floors. These were substituted, however, with concrete construction throughout, and with the exception of hardwood finish on the

first three floors and plastering on the walls of the offices proper, the building is constructed entirely of reinforced concrete. On an average about 125 men were employed on the building during the course of construction, including carpenters, laborers, etc. From 600 to 850 sacks of Portland cement, which equals from 100 to 140 yards of concrete per day, were used.

A fine record was made by the construction company from November 1 to December 15, during which time five floors of concrete including the roof were completed. It was necessary frequently to put on night shifts of carpenters in order to have the centering ready for the next day's operations, and considering the weather conditions a
(Continued on Page 30.)



SECOND STREET ELEVATION AND PART OF THE WASHINGTON STREET FRONT OF THE BELKNAP BUILDING AT THE MOMENT OF COMPLETING THE CONCRETE WORK, DECEMBER 20, 1905.

“KOSMOS”

Kosmos Portland Cement is the product of a model plant, using high grade raw materials and under the direction of a staff of experienced cement engineers.



It is guaranteed the equal of any American Brand of Portland Cement and will be found to run uniform in color, strength and fineness. It is suitable for any class of work and is especially recommended where the requirements are exacting.

Manufactured by the

KOSMOS PORTLAND CEMENT CO., Inc.,

BUSINESS OFFICE: 53-54 Todd Building, Louisville, Ky.

WORKS: Kosmosdale, Jefferson County, Ky.

Tell 'em you saw it in ROCK PRODUCTS.

Louisville Hydraulic Cement.

The best work is the kind that accomplishes all the objects sought at least expense.

Mr. Chas. Hermany, Past President Am. Soc. C. E., says in a letter dated July 4, 1901:

"For many classes of public works Louisville natural cement is as good and reliable as Portland cement, and at a greatly reduced cost in the construction of concrete masonry."

Over 36,000,000 barrels that have gone into actual use attest its merit.

Special slow-setting cement for brick and stone masonry when desired.

Illustrated pamphlets mailed on application.

Western Cement Co.
281 W. Main Street, Louisville, Ky.

Buckeye Portland Cement Co.

ESTABLISHED 1888.
Manufacturers of the celebrated
"Buckeye" brand of



Portland Cement

"Buckeye" has stood the wear and tear in many important places for the past fifteen years and under the new process of manufacture is now better than ever. :: :: :: :: ::

WE INVITE YOUR
CORRESPONDENCE.

Bellefontaine, Ohio.

It Doesn't Stain Bedford Stone



Chattanooga, Tenn., Sept. 6, 1906.

This is to certify, that we have used **HYDRATED PORTLAND LIME** in setting Bedford Stone on the R. S. Faxon residence, Bluff, View, and that we find it perfectly satisfactory in every respect.

Respectfully,

F. A. SUTLIFFE, Supt. Masonry.

—WRITE FOR PRICES—

CHICKAMAUGA CEMENT CO.

CHATTANOOGA

TENNESSEE



"LIMOID"

SEWER PIPE
FIRE BRICK
PLASTER, ETC.



Charles Warner Company



LAND TITLE BUILDING,
PHILADELPHIA.

WILMINGTON,
DELAWARE.



A

STANDARD
PORTLAND



FOR
UNIVERSAL
USE

CEMENT DEPARTMENT.

ILLINOIS STEEL COMPANY,

The Rookery,

CHICAGO, ILL.



PENINSULAR PORTLAND CEMENT CO.

MANUFACTURERS OF

High Grade Portland Cement

GENERAL OFFICE:

JACKSON, - - - MICHIGAN

BANNER CEMENT CO., LOUISVILLE CEMENT.

MAKERS OF THE FAMOUS BANNER BRAND OF

Guaranteed that 90 per cent. will pass a
ten thousand Mesh Sieve.

WE SELL TO DEALERS ONLY.

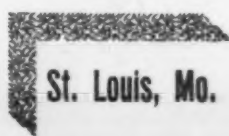
GENERAL OFFICE: MASONIC TEMPLE,

CHICAGO, ILL.

CHARLES W. GOETZ LIME & CEMENT CO.

MANUFACTURERS OF AND DEALERS IN

Glenwood Lime, Banner
Brand Louisville Cement,
Portland Cements and
Building Materials.



St. Louis, Mo.

Newaygo Portland Cement Co.

Sales Office: Michigan Trust Building,
GRAND RAPIDS, MICH.

Write us for prices.

Send us your orders.

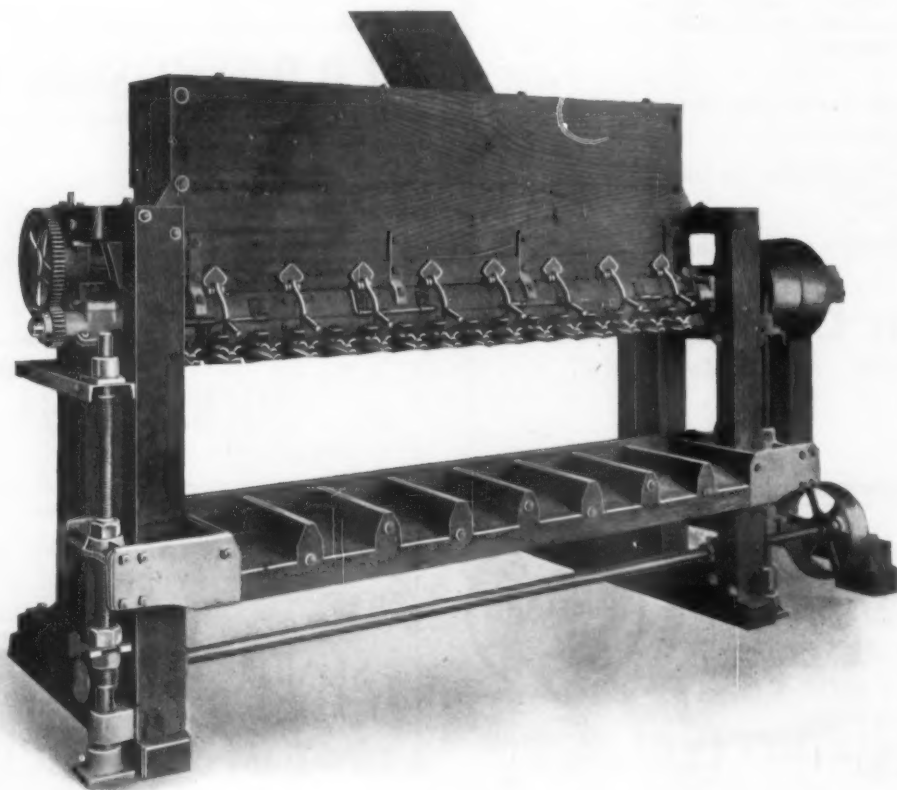
Tell 'em you saw it in ROCK PRODUCTS.

THE BATES VALVE BAG


Reduces the cost of handling Hydrated Lime.

Automatically Fills and Closes the Package

With a Minimum of Labor and Expense.



BATES SYSTEM BAG FILLING MACHINE, AS APPLIED TO HYDRATED LIME.

 The net economy to the manufacturer by using the Bates system for filling bags can no longer be disregarded, for the large item of packing expense is changed to actual profit thereby.

Paper Bags are filled with material without displacing
air at atmospheric pressure.

Attractive Proposition Now Ready For Your Investigation.

Urschel-Bates Valve Bag Co.,
CLEVELAND, OHIO.

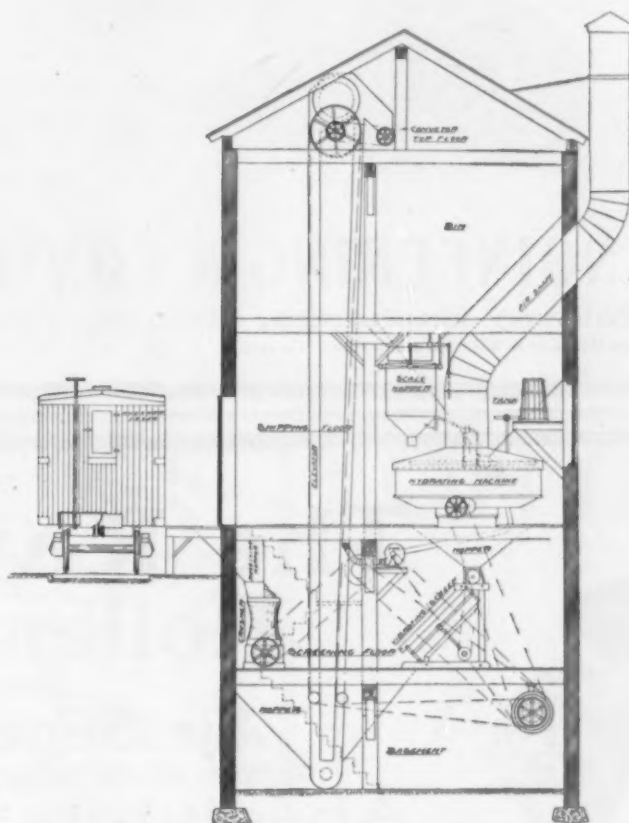
Tell 'em you saw it in ROCK PRODUCTS.

HYDRATED LIME

The manufacture of this material has made some men rich, it is well worth your time to investigate the possibilities of creating a demand for it in your locality.

Did you every stop to figure that you have a large investment in your plant that stands idle one-half the time? Install a Hydrating Plant and more than double your earnings, in fact run your kilns 365 days in the year to their maximum capacity.

Fork your lump lime and improve its appearance. Hydrate the forkings and obtain a fancy price for what formerly went over the dump. You can create a market for this product anywhere in the world, so you do not have to confine yourself to local trade. Stand shipping any distance—land or water.



HYDRATING PLANT

End view of Hydrating plant 40 tons (10 hours) capacity, 24x36 ft. in size, having storage for 100 tons, showing relative position of machinery consisting of one crusher, one hydrating machine and one vibrating screen, also necessary elevating, conveying and transmission machinery.

Note the simplicity of this layout, we can build you a plant to suit local conditions, or furnish you machinery and you do your own construction work.

No experiment, system being used in many of the largest and most successful plants in the country. Ask to have one of our experts call and talk the matter over with you. Write for sample and booklet.

CLYDE IRON WORKS,

DULUTH, MINN.

Tell 'em you saw it in ROCK PRODUCTS.

Chicago Improved Cube Concrete Mixer

"IT HAS NO INSIDES"

This means a saving of \$2.00 per day. \$50.00 per month.
This on cleaning only. A self-cleansing mixer is a joy.

In a cube the sand, stone and cement are introduced in any order. No preliminary mixing is necessary.

They come out as perfect concrete.

With spirals in a trough mixer the material is fed along and comes out as it goes in. The spiral feeds and the water is supposed to do the mixing.

With deflectors the aggregates are simply divided and thrown around. The water is depended on to distribute the cement.

The cube has no deflectors or spirals. It draws the materials out at the sides, doubles them over on top and shakes them 90 times per minute from side to side.

It makes perfect concrete in 15 revolutions. No other mixer can do as well in double the time. Quality considered you save 10 cents per yard with the cube mixer, which amounts to many dollars each season.

You never have to pound it. The concrete does not stick. You have no insides to clean.

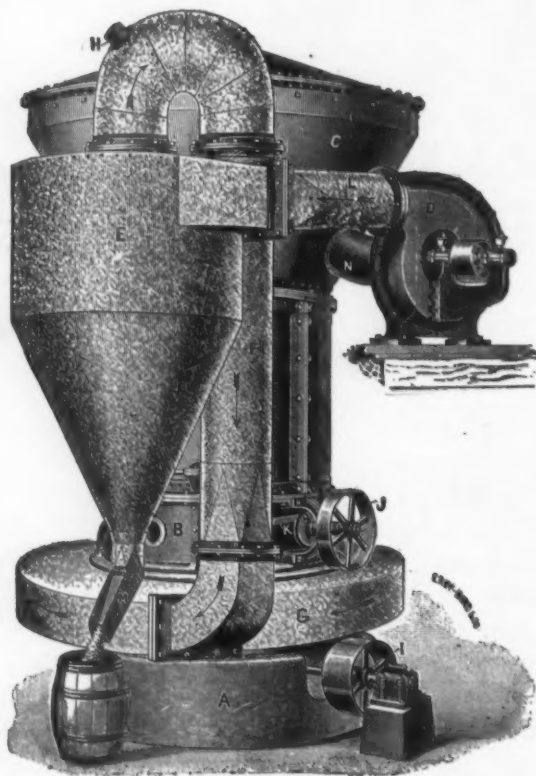
Send for catalogue No. 16.
Many sizes.

MANUFACTURED BY

MUNICIPAL ENGINEERING & CONTRACTING CO.

600 Railway Exchange, Chicago, U. S. A.

We deem it a personal favor when inquirers mention paper in which our advertisement was seen.



The Raymond Roller Mill

WITH

Air Separator

GRINDS EXCEEDINGLY FINE AND IS

Absolutely Dustless IN OPERATION

One mill like cut grinds five tons per hour, to one hundred mesh fineness, of coal, lime, limestone, etc. We can refer you to the largest concerns in the world for references.

Special Separators for hydrated lime, cement or any material.

MANUFACTURED SOLELY BY

THE RAYMOND BROS.

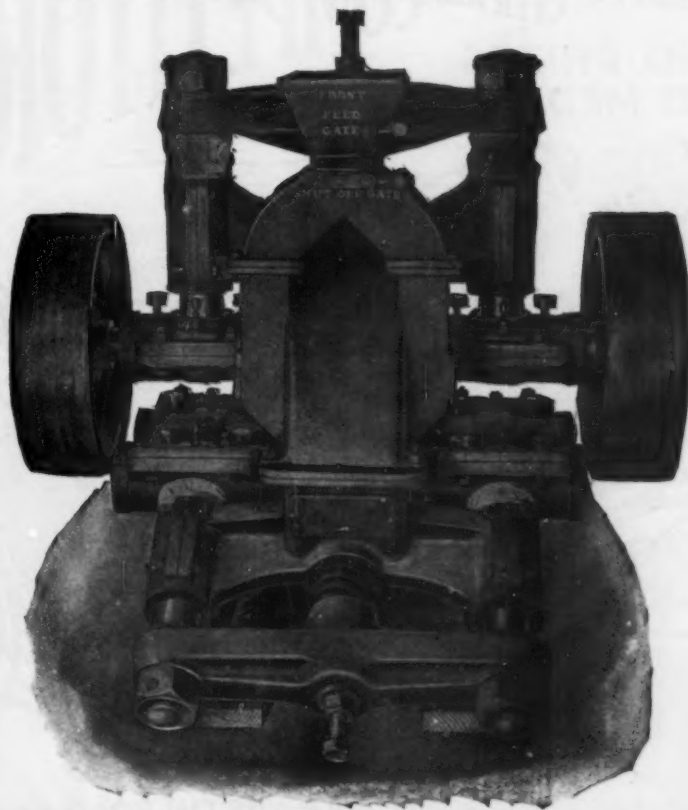
IMPACT PULVERIZER CO.

141 Laflin Street,

Chicago, Ill.

Tell 'em you saw it in ROCK PRODUCTS.

THE KENT PULVERIZER



Takes one inch feed. Grinds to any fineness from 10 to 200 mesh.

GRINDS PER HOUR WITH LESS THAN 25 H. P.

CEMENT CLINKER,	40 bbls. to	98%	20 Mesh.
CEMENT CLINKER,	12 " "	"	100 "
LIMESTONE,	2½ tons "	"	200 "
LIME,	4 " "	"	100 "
ROSENDALE CEMENT,	43 bbls. "	90%	50 "
QUARTZ TRAP-ROCK,	4 tons "	"	40 "

You can easily figure from this what a Kent Mill would save for you.

W. J. BELL, Esq. Supt.
NEWAYGO PORTLAND CEMENT CO.,
Newaygo, Mich.

Says:—Four KENT MILLS are driven by one 75 H. P. motor.

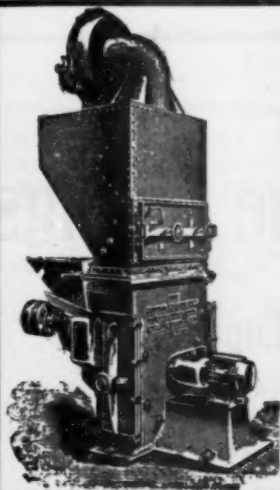
For Catalogs and Information, Address

KENT MILL CO.

170 Broadway,

NEW YORK.

Cyclone
PULVERIZER.



STRAKER'S PATENT.

AIR SEPARATION—The product can be made of any desired fineness without sieving.

DUSTLESS in operation.

OUTPUT per H. P. per hour of the Cyclone Mills is much larger than that of any other mills.

We build SCREEN SEPARATION MILLS too.

CATALOGUE on request.

WRITE US WITH SAMPLES AND PARTICULARS.

E. H. STROUD & CO.

Manufacturers for U. S., Canada & Mexico.

30-36 La Salle Street,

CHICAGO, U. S. A.

DRYERS

TO DRY

Any Material

Built to meet requirements in the most Economical Manner.

—BY—

J. R. ALSING CO.

Liberty St., NEW YORK

Tell 'em you saw it in ROCK PRODUCTS.

AUSTIN MACHINERY GIVEN HIGHEST AWARDS OVER ALL COMPETITORS

TWO GRAND PRIZES
THREE GOLD MEDALS

AT

WORLD'S FAIR

ST. LOUIS

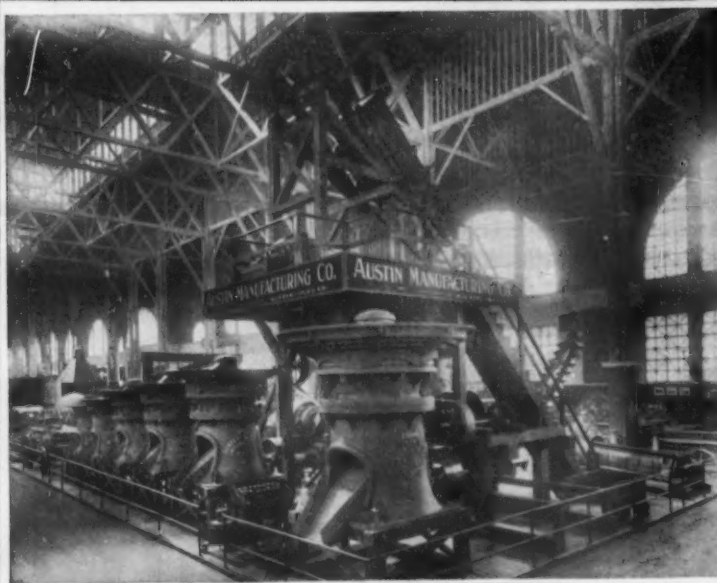
1904

AUSTIN MANUFACTURING CO.
CHICAGO

The

AUSTIN GYRATORY CRUSHER EXHIBIT

was the ONLY Gyratory Crusher Exhibit to be given both the GRAND PRIZE AND A GOLD MEDAL thus officially stamping THE AUSTIN GYRATORY CRUSHER by the International Jury as the HIGHEST TYPE OF GYRATORY CRUSHER IN THE WORLD



The

AUSTIN ROAD AND CONTRACTORS MACHINERY

in a separate Exhibit was awarded

A GRAND PRIZE AND A GOLD MEDAL

being the HIGHEST AWARDS EVER GIVEN to one Company for Machinery of that Nature in the HISTORY OF WORLDS FAIRS



Mica Schist or Fire Stone Linings

—FOR—

Lime Kilns, Bessemer Converters and Cupolas, Etc.

Used in place of Fire Brick. It costs less and lasts longer. Any mason or person that can build a stone wall can lay it. It comes out of the ground in irregular shapes and sizes. It looks like building stone. It is easily broken by a hammer. The small pieces and crumbs can be mashed up and mixed with a little clay and water, which makes a Fire Mortar to lay the wall; therefore no loss—under strong heat it freezes into a solid wall.

We also grind this Mica Schist Rock, for making Fire Brick, Fire Sand, Furnace Bottom Sand, &c.

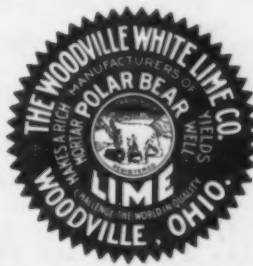
J. W. PAXSON CO., PHILADELPHIA, PA.

Tell 'em you saw it in ROCK PRODUCTS.

OUR HIGH GRADE PRODUCTS



Largest Capacity of Hydrated Lime in the United States.



WOODVILLE WHITE LIME CO.,

WOODVILLE, OHIO.

The Ohio Lime Company,

MANUFACTURERS OF AND WHOLESALE DEALERS IN

WORKS AT

Fostoria, Ohio.
Gibsonburg, Ohio.
Sugar Ridge, Ohio.
Tiffin, Ohio.

**Ohio White Finishing Lime,
Ground Lime, Lump Lime,
Fertilizer, Hydrate Lime,
Cement, Plaster,
Hair, &c.**

Capacity
3500 Barrels
Per Day.

OFFICE:

309-210-211 CHAMBER OF COMMERCE BUILDING.

TOLEDO, OHIO.

"CREAM OF LIME"

Produces the Smoothest,
Hardest and Best Finish.

The **BUCKEYE LIME CO.** **GENOA, OHIO.**

Tell 'em you saw it in ROCK PRODUCTS.



**Big
B**



Lime.



BIG B LIME

ITS HISTORY IS A STORY OF SUCCESS.

The Building Trades' Barometer. The Iron and Steel industry promises increased activity. It is predicted that a new tonnage record in that business will be established.

This means a large demand for LIME, and transportation facilities taxed. Isn't it wise to arrange early for your supply of LIME?

BIG B's quality is unsurpassed. That means satisfied and contented contractors for you. Our quick shipping facilities mean fresh lime on short notice.

A POSTAL CARD WILL BRING OUR 1905 MEMORANDUM BOOK.

THE NORRIS AND CHRISTIAN STONE AND LIME CO.
MARION, OHIO.

WESTERN LIME CO.

HUNTINGTON, INDIANA
MANUFACTURERS OF

LUMP LIME

ALSO, DIAMOND BRAND SUPERIOR WHITE FINISH

A HYDRATED LIME

AND A GROUND AND FERTILIZER LIME

Capacity 4,000 barrels or 10,000 bushels per day. Capacity of Hydrated Lime, 120 tons per day. Our LUMP LIME as well as our HYDRATED LIME is the very best obtainable for all purposes for which a good lime is needed in erecting buildings. Our HYDRATED LIME is absolutely the best finishing lime on the market.

H. ACHERMAN, Pres.

L. V. UNCAPHER, Sec.

J. W. THEW, Treas.

The

Central Ohio Lime and Stone Co.
of Marion, Ohio.

CAPITAL \$150,000.00.

We own One Hundred and Seventy Acres of the best and choicest lime and stone land in Central Ohio. The plant is located north of the city on the Pennsylvania R. R. We are now operating our plant with a large force of the most experienced men that can be found anywhere.

We produce and have the statements to show that we have the best white lime that is on the market. Our furnace stone is pronounced by experts and consumers to be the best they have ever used.

Our kilns and crusher plant are now in full operation and we solicit your patronage. We guarantee our product to be as good as the best, give us a trial order and be convinced of our statement. All orders placed with us will receive prompt attention.

The Central Ohio Lime and Stone Co.

Tell 'em you saw it in ROCK PRODUCTS.



ASH GROVE
WHITE LIME ASSOCIATION
MANUFACTURERS OF
**High Grade
White Lime.**
KANSAS CITY, MISSOURI.

WESTERN LIME & CEMENT CO.,
MILWAUKEE, WIS.

Largest Manufacturers of Magnesian White Lime in the United States.
Daily capacity, 10,000 Bbls.

Exclusive Northwestern Distributing Agents.

For all the best Lehigh Valley, Pennsylvania, Brands of Portland Cements
Direct Importers of German Portlands.

Leading Shippers Throughout the Northwest, of Mason's Building Materials in General.

ROCHESTER LIME CO.

209 Main St., West, Rochester, N. Y.

MASONS' SUPPLY DEPOT.

Manufacturers of, and Wholesale Dealers in

Snow Flake Lime, Cement Building Blocks, Alpha Portland Cement, Hoffman Rosendale Cement, Cummings Akron Cement, Kings Windsor Wall Plaster, Kings Plaster Paris, Fire Brick, Fire Clay, Dynamite, Caps, Exploders, etc.

FOWLER & PAY,

Brown Hydraulic Lime, Austin Hydraulic
Cement, Jasper Wall Plaster, Brick, Stone.

CEMENT WORKS: Austin, Minn.
PLASTER MILL: Ft. Dodge, Iowa.
WAREHOUSE: Minnesota Transfer.

MANKATO, MINN.

The Strongest White Lime

ON THE MARKET

Uniform QualityFinest Grain

BEST FOR
SAND-LIME BRICK
and Chemical Purposes

Our building lime has no superior, carries more sand, makes more mortar. **Crushed stone** for all purposes; **Stone dust**, and **Carbonate of lime**. Best facilities for prompt shipments. CORRESPONDENCE SOLICITED.

MITCHELL LIME COMPANY
MITCHELL, INDIANA

Swindell Patent Cement Burner

Six kilns in operation at Diamond Portland Cement Co.

Swindell Patent Lime Burner

Nine kilns in operation at Toledo White Lime Co.

The Only Successful Methods of burning Portland Cement and Lime by Producer Gas. Economical.—Increased Output.—Saving in Fuel.

Wm. Swindell & Bros., German National Bank Bldg.,
PITTSBURG, PENNSYLVANIA.

Farnam "Cheshire" Lime Co.

OF CHESHIRE, MASS.

MANUFACTURERS OF THE

Celebrated "Cheshire" Finishing Lime.

Well known throughout New York and the Eastern States as the finest finishing lime manufactured. The special feature of this lime is its quick and even slacking, thus preventing any cracking or checking when put on the wall. It is the best lime used in the country today for all

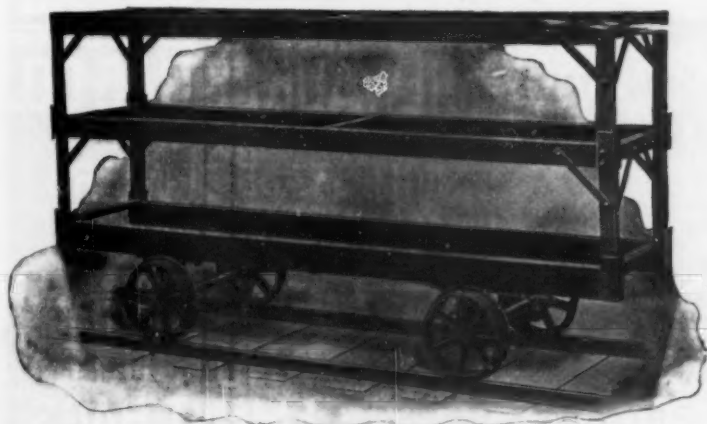
HIGH GRADE FINISHING WORK

Selling Department, 39 Cortlandt St., N. Y., C. J. CURTIN, Pres't.

Machines and Presses

For Concrete and Clay Products of all kinds.

CARS, roller bearing, for Concrete Block, Clay Brick, Dumping and Warehouse Cars of all description. Write us for Catalogs.



The Ohio Ceramic Engineering Co.
50 FALL STREET,
CLEVELAND, OHIO.

Tell 'em you saw it in ROCK PRODUCTS.



MAURICE GANDY,
Inventor.

The Genuine Gandy Stitched Cotton Duck Belting

is adaptable to all sorts of conditions, and all kinds of outdoor and indoor work.

There is a nutshell is the reason why it is superior to leather or rubber belting. Another reason is that it costs less and lasts longer.

Trying conditions only prove the superior qualities of Gandy Belting the more conclusively, whether you use them as conveyors or as transmitters of power.

We are now stamping our Belting "Genuine Gandy Belt" instead of "Original Gandy Belt" every ten feet. But either stamp assures you of getting the real and only Gandy Belt.



U. S. Pat. Office.
The Sign of the
Best Belt.

The Gandy Belting Co., BALTIMORE,
MARYLAND.



Get right, use
LEVIATHAN
"Leviathan"

ONE SAYS:

The reason why we use "LEVIATHAN" Belting in preference to all others is that we find it in

efficiency and durability at least 50 per cent. in excess of the best special faced rubber belting obtainable.

(Signed) LAKE COUNTY GRAVEL CO.
By W. T. EATON, Treas.

MAIN BELTING COMPANY, Manufacturers.
55-57 Market Street, CHICAGO, ILL.

PHILADELPHIA, 1210 Carpenter St.

BOSTON, 120 Pearl St.

BUFFALO, 40 Pearl St.

RUGGLES - COLES
DRYERS
 RUGGLES-COLES ENGINEERING CO.
 NEW YORK CHICAGO



This Halftone

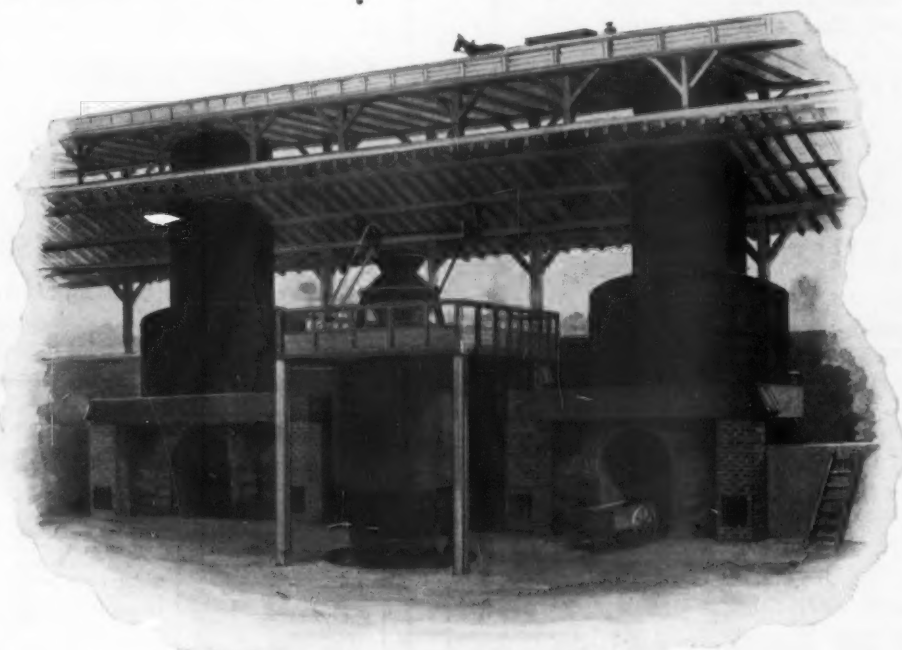
represents a gear typical in size and design to gears used on cement machinery. We have been making this and many other designs for the past three years and are selling more to-day than ever.

R. D. Nuttall Co.

500 Duquesne Way,
 Pittsburg, Pa.

Gas Producer Plant of the New England Lime Co., New Milford, Connecticut.

PRODUCER GAS
 Makes the Best Lime
 It increases the
 Capacity of a Plant
 and Reduces the
 Fuel Bill



The Total Cost of
 This Installation
 Will be Paid for by
 the Saving Effected
 During the First
 Year of Operation

We are now equipping a second plant for the company at Canaan, Ct.

MORGAN CONSTRUCTION CO., 40 Exchange Place, New York, N. Y.

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DEVOTED TO THE PRODUCTION
OF ROCK AND ITS PRODUCTS

SEMI-MONTHLY.

Entered as second-class matter December 16, 1905, at the Post Office at Louisville, Ky., under Act of Congress of March 3, 1879.

THE FRANCIS PUBLISHING COMPANY.

Publishers.

E. H. DEFEBAUGH President.

A semi-monthly trade journal devoted to the interests of the manufacturers and dealers in rock products and kindred lines, including Lime, Cement, Salt, Sand, Slate, Granite, Marble, Sandstone, Grindstones, Artificial Stone, Emery Stone, Quarries, Monuments, Manganese, Asphalt, Phosphates, Plaster, Terra Cotta, Roofing and Roofing Tile, Coal, Oil, Mineral Wool, Brick, etc.

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Regular Staff Correspondents in the Principal Centers.

The mission of ROCK PRODUCTS is to serve the trade in any and every honorable way possible, to promote better profits and make life more pleasant for those engaged in the business to which it caters. With this end in view, criticism is courted, and all are invited to use its columns to further ideas and suggestions for the good of the trade. The office, too, is at the service of the constituents of this paper; so when you want to buy or sell, or merely ask a question, write, and when you are in town, call and make it your headquarters.

"TELL 'EM YOU SAW IT IN ROCK PRODUCTS."

Matter for publication to insure insertion in any given number must reach this office at least ten days preceding the date of the paper. This measure is made necessary by the rapid growth of circulation, taking more time in the printing department.

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LOUISVILLE, KY., DEC. 22, 1905.

Semi-Monthly.

PROGRESSIVE newspaper action has been the key note in the life of Rock Products, and a reason for changing the paper to semi-monthly. Our readers have grown in number in every state in the Union, Canada, and a number of foreign countries; and it is their demand that has particularly influenced this move. We hope by giving you the paper oftener, to accommodate the amount of necessary news for all branches of the business, and, at the same time, place it in your hands in convenient form and before it gets stale.

Rock Products has personally covered all sections in the stone industry by its editorial staff, and has endeavored by pen and camera to enlighten the world as to the inexhaustible resources of building and monumental material in stone and kindred products, and it will be our constant aim to increase this service as well as to intelligently inform the manufacturer, dealer, contractor and architect of the beauty, the solidity and adaptability of American stone, to influence its being quarried and manufactured in larger quantities at profitable prices, and to promulgate intelligent, friendly intercourse through the proper channels in all branches of the business, and thus add to the possibilities of the operator to advocate the greater influence of modern mechanical appliances and improved methods for the general good of the trade.

We appreciate most heartily the friendly interest of those engaged in all branches of the stone business in Rock Products, and its success, which

has been phenomenal; and we trust to make it permanent by consistent, conscientious effort to retain this regard, and to extend our field of usefulness by making a still greater publication, and one of inestimable value to every individual connected with the industry.

The new classification provides for covering the quarry interests particularly in the first issue of the month, followed by the second number containing the story of the manufacturer and dealer, enabling us to better carry out our plans to the further interests of all connected with the stone business.

In the publication of two issues each month we desire to assure all branches of the stone business, from the quarrymen of blocks to the road contractor who buys crushed stone, including all the channels in which building and monumental stone are handled, that every department will be given the personal acquaintance with the possibilities and the needs of the business in order to influence better conditions.

The editorial policy of this paper will continue to be independent of any interests or individual, and you can absolutely depend on an honest effort to aid your cause with prejudice toward none and fairness to all. In other words we are in the

business to make our livelihood out of a trade paper in your line of business, not by illegitimacy or fake transactions, but by honest effort, and we hope to gain your continued good will by conducting the best paper in the business upon these principles.

THE American Portland Cement Manufacturers' Associations held their quarterly meeting at the Hotel Astor, New York City, December 11 and 12. There was the usual good attendance, and a hearty sentiment of good fellowship and confidence in the situation prevailed.

THE bag question was one of the much discussed questions at the convention of the Portland cement manufacturers in New York on the 11th and 12th of this month. The cheapening of the package gets to be more and more desirable as the number of them increases.

THE plaster dealer finds that he has to pay more for gypsum now than he has for several years. The reason is easily explained by the immutable law of supply and demand. It is safe to say that gypsum will be held at a still higher value for the new uses in which it is being employed are increasing the demand away beyond all the arrangements that have been made to take care of the supply.



A Merry Christmas.

As the last days of 1905 are being ushered out, it is with a great deal of pleasure that we look back upon a prosperous year in the business of our country, and although the Christmas bells, Christmas trees and all the other delights that gladden the hearts of the children do not now appeal to us so forcibly, still we may all put ourselves in a condition that will make us young again.

One of the greatest of Greek sages has said that "by the gladness of his heart alone can man preserve his youth," and following out this old saying, we find there is just as much fun making Christmas for the little ones as it used to be to anticipate and enjoy those pleasures so generously prepared for us long ago.

We all know how Ponce de Leon and his retinue of followers sought in the dark forests and dismal swamps of an unknown country for that which this Greek philosopher has told us has an abiding place in every man's bosom.

Our lives are only what we make them, and the man who can make his heart glad at Christmas-tide, joining in the one great chorus of joy with all the world, is not too old to live another year, for the length of our lives should really be counted by the number of happy days.

Then, if you would know and appreciate the full happiness of this holiday time, all gloom must be scattered, and "be ye," as the Great Master has said, "as little children."

A Few of the Improvements.

Since the Indianapolis convention, almost one year ago, those inventive geniuses, who have applied their talents to the production of machinery for the manufacture of concrete building blocks, have not been idle. While nearly every machine that was in the market at that time has been improved as far as its mechanism and adaptability to the different requirements of construction is concerned, one of the most notable features of progress is the improvement in the face plate that gives the appearance of finish to the completed building. A year ago there was not a pallet that offered the broken ashler effect, nor was there a bushaxed face, few tooled faces were offered and were not recommended while sawed finish or the smooth stone surface was not recommended by any of the machinery men.

To-day the broken ashler, and the bushaxed and plain sawed face blocks are offered by many of the leading manufacturers. In one case the actual broken ashler itself, made in labor saving to the printer and type quantities so well known to the printer and type foundries for centuries, is offered.

Many of the false ideas that prevailed in connection with the concrete block industry have disappeared, and it is now upon a sound practical basis, offering an excellent and thoroughly adaptable building material of the highest grade for very many purposes. Indeed good concrete block construction, as offered by the reliable manufacturers and contractors to-day has no superior, and it represents the most advanced development of beauty, economy and durability, offering as wide a range of flexibility as can be desired in the construction of any building in good taste.

An Attractive Opportunity.

For more than a year the Union Sandstone Brick Co., of Lafayette, Ind., has been engaged in the manufacture of sand-lime brick, and much careful study has been applied to the perfecting of their operations in the way of securing exactly the correct thing in machinery and equipment of every character. The plant had scarcely passed through the experimental stage that is necessary with every sand-lime brick proposition, when dissatis-

faction arose among the stockholders, and this occasioned a serious disorganization in the conduct of the company's affairs. They had succeeded in making some good brick, and in connection with their very valuable sand properties there was every argument to run a dividend producing business through a long period of years. But, when disagreements between the part owners of any business arise, it is like "the worm in the bud" and usually ends in the same result—the destruction of the business.

As a result this good business proposition is now in the hands of the Tippecanoe Loan & Trust Co., and for the purpose of satisfying all the claimants they are offering it for sale to the highest bidder according to the terms and specifications set forth in their announcement on page 73 of this issue, which gives a complete inventory of the machinery and equipment, besides outlining the collateral attractions which are included with the sale. To say that this will be sold at a bargain is not making it strong enough, for it will probably be sold for about 50 per cent of the cost of the machinery, which for all intents and purposes, is in better condition now than when it was in the shops of the original builders, being conveniently adjusted and arranged for practical operations.

The sand property alone is very attractive and worthy of the investigation of every party who has given a thought to entering the sand-lime brick industry, or taking up as a speculation, the exploitation of a property that would prove very valuable in the hands of the right party.

Lime Meeting in Chicago.

THE National Lime Manufacturers' Association will hold its annual convention at the Great Northern Hotel, Chicago, January 18 and 19, 1906. President Chas. Warner has succeeded in arranging an interesting program and there will be several papers by the leading lights of the business, and this will be the best meeting for the dissemination of valuable information of the lime manufacturer ever held, and should be attended by every one interested in the industry from Maine to California. The manufacturer of lime has made great progress in the past five years, owing to the present effort among a number of practical men in the business to spread the gospel of improved methods and better profits in the industry. Make a note of the date and make arrangements to be present.

THE increased demand of Portland cement can best be understood when we take into consideration that the output of the new plants that went into operation, and the enlarged facilities of those already doing business represented a total, increase over the output of 1904 of about 40 per cent. Early in the spring of this year every Portland cement manufacturing concern in the country had a large accumulation of cement in their warehouses. There has been sufficient consumption to take up the cement that was left over from the previous year, besides the 40 per cent increased production of the present season, and at this time there is not a surplus barrel of cement in the country.

Since the first of July very satisfactory conditions have prevailed, and while the manufacturers have not made any great amount of money, still the conditions are far better than have prevailed for several years at the close of the season.

The outlook for 1906 indicates a still greater demand, for there is not a contractor in the country of any reputation who has not upon his order books a nice showing of engagements for future work. Indeed the cement industry is to be congratulated upon the excellent outlook in the immediate future.

SOLUTION

Of the Trouble and Expense that Attaches to the Packing of Dry Pulverized Products.

There is not a manufacturer of the product of the rock, whether he has lime hydrate, Portland or natural cement, or any plaster material to offer to the market in the dry pulverized state, who is not familiar with the large expense, unending annoyance and waste which is attached to that part of the manufacturing operation where the product is put up into the market package.

This has been the subject of more than one paper and long discussion before the lime manufacturers' association. The Portland cement manufacturers never have a meeting without the package question bobbing up and the debates in this industry alone concerning the rebates for return of empty sacks and the proper billing for losses and shortages has consumed a great deal of valuable time.

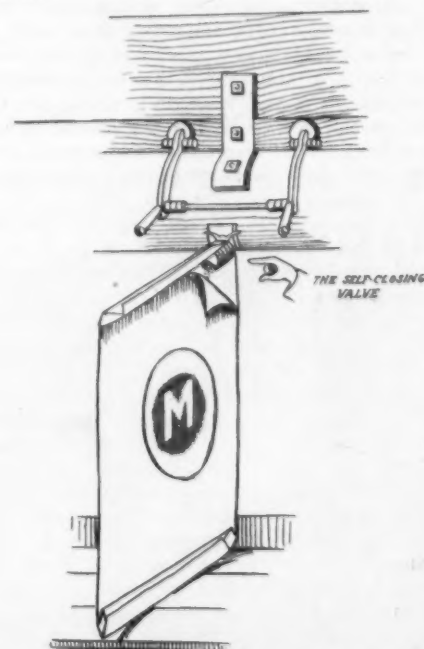
The plaster men have never been together without the difficulties that surround the package question becoming an item of important consideration.

The manufacturers of these commodities have long considered this question as one necessarily entailing a great deal of worry, expense and waste, and up to this time it has merely been a strenuous effort to make the best of a bad condition.

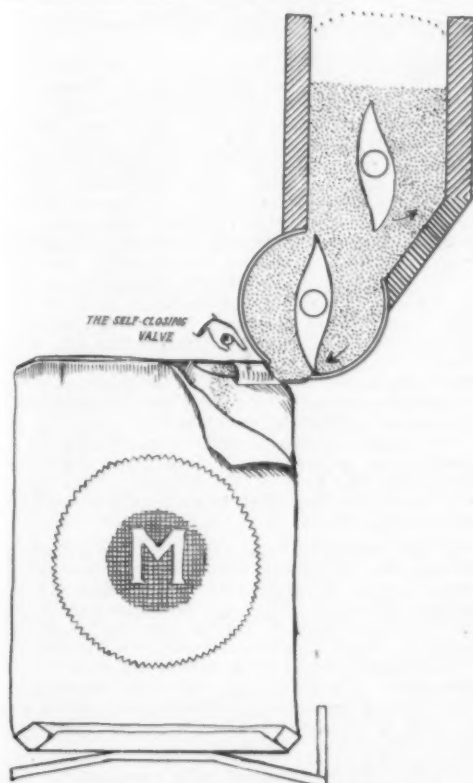
The matter of obtaining a uniform volume of material in a large quantity of bags has proven itself in practice to be a very elusive proposition, and one requiring no little skill on the part of the operator. In some factories expensive equipments of scales have been installed, and a little army of help organized and carefully systemized in order to guard against waste and turn out good tight and cheap packages.

Perhaps there is no item of so much importance to the industries just mentioned as the adaptation of the automatic filling and closing machinery which has been introduced by the Urschel-Bates Valve Bag Co., of Woodville, Ohio, now operating especially in the lime hydrate industry.

This is a great development to be recorded for the year 1905, and as its unquestioned success has already been demonstrated and is being accepted by all the progressive concerns in the business as rapidly as the machines can be produced and installed. The cement and plaster industries will soon have this convenient and economical method offered them upon practically the same basis as the manufacturer of hydrated lime can at present obtain.



METHOD OF PLACING THE BAG IN POSITION FOR LOADING
—NOTICE THAT THE EMPTY BAG HAS ALL THE AIR EXCLUDED. SEE PAGE 6.



SECTIONAL VIEW OF THE URSCHEL-BATES PAPER BAG BEING LOADED BY POSITIVE MECHANICAL FEED OF THE MATERIAL. SEE PAGE 6.

The Bates valve bag was originated by Mr. A. M. Bates, who had previously been in the salt business where great quantities of small packages were filled. The laborious and expensive methods in vogue at the time seemed so entirely antiquated that a more rapid and cheaper method of filling seemed a public necessity. After about a year and a half's work, the idea came like a flash, and the result is the Bates valve bag as it is to-day. The territory was so absolutely new that not only in the bag itself, but in the processes and machinery necessary for making use of the bag, or, in other words, for filling it, were able to be patented in the broadest possible sense, and the Bates Valve Bag Co., which was organized about three years after, made application in all for something like one hundred patents covering the various features of the art in the United States and all the principal foreign countries.

Mr. Bates' ideas were to perfect a plan by which when the bag is placed in position, which can be done by the methods employed in the Bates system more easily than is possible by way of any other method, that from that point on the work should be automatic. The Bates' system in the filling of small bags with salt and rice has been the accepted method for the last two and a half years; and they have filled and put on the market in all 112,000,000 packages. It is possible in the case of filling salt pockets, for a single girl operator to fill 60,000 pounds of table salt into five pound packages in a single ten hour day on one of the filling machines produced by this company. The magnitude of this is apparent when you consider that no girl could by any means handle ever so short a distance one-half of this dead-weight without any attempt of putting it into five pound packages ready for the market, as with the entire line of filling devices manufactured by this company for various commodities the salt is never lifted by the operator up to the time that it is enclosed in the finished package they handle simply the empty package, and the machine does the filling, which being done into an automatic or self closing bag, produces the finished article ready for the market, which is discharged by the machine down the sluice or on to the conveyor, or carried by its own weight on to the cars, or to the warehouse.

Among the greatest difficulties that the inventor has encountered from the beginning of this proposition has been from the inability to refer to other people's practices, from the simple fact that there has never been any work done along this line, and from the very inception of the valve bag

proposition it has been a case of breaking new ground with no precedent whatever to refer to.

At the present time the Bates company are operating in various commodities, but the thing that is most pertinent to this article is the application of the Bates system to the hydrate of lime. We are informed by the Woodville White Lime Co., Woodville, Ohio, that the Bates machine in operation in their plant makes it possible for one man and a boy at 75 cents a day to take out sixty tons of hydrate of lime in 40 pound sacks. This makes 3,600 packages. They state that the operation is so entirely free from dust that it is impossible to tell what is being put into the sacks. There is no scatter or waste of the material. The sacks are simply threaded on to the tubes by the boy and taken off by the man as fast as they can work. The only limit inside of from five to eight thousand packages per ten hour day rests with the man, as the machine could easily be speeded up to a point where it would fill even 10,000 packages in ten hours. The present machine actually finishes, so far as the machine is concerned, a row of eight 40-pound hydrate sacks in 25 seconds, but it has been found impossible to serve the machine at anything like this rate of speed.

The package when filled has been pronounced by every lime man who has seen it as the acme of perfection. It is a package that has a double bottom, one at each end, and when ricked up in a car or warehouse will stow much more snugly and occupy less space than the old tied sack, and will not, owing to the fact that one end is fuller than the other, tip over after it is piled head high. One of the prolific sources of breakage of paper sacks in the old tied sack is the fact that careless handlers will grab the top of the sack with one hand and in lifting it will pull the top off, as the strain is concentrated at that one part. With a valve bag it is impossible to secure a hold with one hand, making necessary the handling of the sack in the proper way with both hands, which has resulted in a very great reduction of the element of breakage. The sack can not come untied as there is no string on it. The operation of sacking does not include the furnishing of sixty cents worth of tying strings to every carload, nor is there in the sacking proposition by the Bates system anything of an expert character that calls for any especially trained help. On the contrary any man can be picked up from any gang in the mill, and can do a day's work the first day on the Bates machine.

With the Bates system the reserve force rests in the machine. It can be called into service at will, but does not cost a wage while standing. If, for any reason, you are not making shipments, and, on the other hand, it will not strike and can be worked twenty-four hours per day, for months without stopping if such a course is necessary to fill one's orders. The installing of this system is so simple and inexpensive that the Woodville people explain that the machine was set in their plant in one day's time, as it is simply a case of bolting the machine to the floor and spouting the material to it. The net advantage of this discovery to the lime hydrate business will result in a saving of practically 50 per cent of the present sacking cost, not, of course, counting the cost of sacks, which the Bates Co. guarantee will be marketed by the various bag manufacturers who are licensed to manufacture their bag at the same cost as the open mouth bag of the same quality to hold the same amount of material.

The construction of this machine is absolutely simple, and such that the element of breakage or repairs can be disregarded in considering its usefulness. The power required to run these machines is trifling. The application of the Bates system is more complete in the case of the hydrate lime than in the cement proposition, which will be equally effective, and it is about ready to be launched in the Portland and natural cement industries as well as all the different plaster propositions. The sack in every case is identical and is 99 per cent of the proposition. Of the other 10 per cent the application of the system to these other commodities simply involves slight modifications in the machine to make it cover the slight change in the requirements.

The users of the Bates system say that while there is a very large net saving in cost, the tremendous facility afforded by the great simplification of the labor problem and the ability to put out the maximum quantity of stuff in the minimum of time is the principal advantage of the system.

Not the least among the important advantages offered by the Bates system is that, in loading paper bags with Portland or natural cement and hydrated lime, the paper bag can be filled with dry

material without displacing air at atmospheric pressure. The paper bags are received from the factory in the usual way, bundled flat, with all the air practically excluded, and when properly constructed as the Bates system practically guarantees it is nearly an air-tight package.

The feeding tube is thrust into one of the closed ends and the material opens as it fills the bag by a process of positive mechanical injection, so that the bag is opened out by the material itself, completely escaping all chance of deleterious combination with atmospheric moisture of every description, so that it is easy to see that the users of the Bates bag may look for this positive improvement in the condition of their packed and stored material.

It is understood that the company behind this great invention and improvement have adopted a very liberal policy with regard to the introduction of their system, and make such an attractive proposition to the manufacturers of dry pulverized products of rock that it is readily appreciated and accepted.

Notable Feats of Construction.

SAN FRANCISCO, CAL., December 8.—In addition to the great and constant demand made on the brick and cement resources and industries of California in the construction of buildings, the railroads are using immense quantities of these materials. The railway construction consists largely of tunnel boring.

For the past year the Southern Pacific Railroad Co. have been engaged in building a short piece of road, extending into South San Francisco. This stretch passes through a semi-mountainous country, closely bordering on the shores of South Francisco Bay, and is known as the Bay Shore Cut-off.

In total length this "cut-off" does not exceed nine miles, yet no road of equal length ever constructed in the United States cost as much as this short stretch will when completed and equipped. The total outlay it is estimated will approximate nearly \$8,000,000.00. Besides having one of the greatest open railroad cuts in the world, there will be five tunnels on this brief stretch of road. One tunnel is 3,600 feet long; another 2,500 feet; another 1,800 feet; a fourth, 1,200 feet, and the fifth, 1,100—thus aggregating a total of 10,200 feet of tunneling.

It is along these tunnels that vast quantities of brick, lime and cement have been, and will be used. Though most of the distances of these tunnels are through rock, yet it is necessary to line them all with concrete and brick. The bottoms are being thickly lined with concrete and also the sides for some distance above the track surface. All the arches are of brick.

Each tunnel is 30 feet wide at the track (double track) level and 25 feet to the crown of the arch. From these dimensions some general idea may be formed of the immense quantities of lining and bracing materials needed before the completion of the work. More than two years will be required to complete all of the tunnels. This long period is a favorable circumstance, and it enables the brick makers, lime burners and cement plants time in which to turn out great quantities of material in supplying the remorseless demand; otherwise there might be a famine in the local market. The brick used are of superior quality, being well burned to withstand the constant moisture and soil seepage; while the concrete is strong enough to meet every requirement.

Most of these materials are furnished by local (State) manufacturers. The cement is principally furnished by the Standard Cement Co., whose large works are at present located at Napa Junction; the brick comes from different large contractors, while most of the lime comes from Santa Cruz County kilns. Millions of brick, and several hundred thousand barrels of cement, to say nothing of lime and sand, will be used in lining nearly two miles of tunneling, and all this material means a great demand on the resources of manufacturers and the outlay of large sums on the part of the railroad company.

The rock taken from the great cuts and tunnels is of a rather soft, shattered, shaley nature, totally unfit for building purposes. All the tunnels have to be very strongly lined and braced with concrete and brick, owing to the shivered nature of the rock.

A new building material which is now being manufactured at St. Petersburg is called kremite. It is composed of a powdered clay, sand and fluor spar, which are melted together at a high temperature and molded in any desirable shape.

Cement Users Convention, Milwaukee.

The local committee at Milwaukee have completed their arrangements for the accommodation of the second convention of the National Cement Users' Association which takes place in that city on January 9, 10, 11 and 12.

THE MILWAUKEE LOCAL COMMITTEE.

We present a short sketch of the various members of the committee, who had charge of the local arrangements at Milwaukee. They have labored long and faithfully to the end that when the delegates arrive in Milwaukee they will feel like they are stepping into their own home town. They say, it is "an ill wind that blows nobody any good," and this was the case with the local committee when they found they could not secure the Armory building. If there is one thing for which Milwaukee is famous (outside of the beer), it is good hotels, and none of the delegates need be afraid that they will lack first class accommodation.

Wm. A. Monsted, fourth vice president of the association is also a member of the local committee who have the matter of arrangements in charge. He has been untiring in his efforts and much of the good work of the committee has been due to him. He is a member of the firm of A. Monsted & Co., and is one of the strong men of the association.

No better selection could have been made than Mr. J. P. Sherer as chairman of the local committee. He has worked night and day and secured the support of the Milwaukee business men in the enterprise. Quite an elaborate program of entertainment has been planned and Mr. Sherer's genial personality pervades the whole plan. Besides being manager of the National Building Block Machinery Co., he is connected with the Pennsylvania Coal and Supply Co., a merger of six companies, one of which was formerly owned by him. He is not only a fine business man, but an excellent raconteur. Every one visiting Milwaukee will immediately feel at home the moment Mr. Sherer grasps his hand and turns his beaming smiles upon him.

Another member of the local committee that deserves especial mention is Mix Ivan S. Macdonald, the editor and manager of the *Western Builder*, a thriving publication of Milwaukee. He is a natural born hustler and no task imposed upon him has proved too much. While yet a young man his face and personality have made his counsel much sought after and he has been a tower of strength to the committee.

Mr. Wm. C. Lantry is another member of the committee who has done yeoman service. He is connected with the Western Lime and Cement Co., one of the largest firms in Milwaukee, and is one of the best posted men in the business. He is always to the front when there is any work to be done, and has been ready and willing to lend his counsel and aid upon every occasion.

Wm. Berthelot, another hustler on the committee, is the proprietor of the Berthelot Construction Co. He is well known to the trade. He is very much interested in the success of the convention and predicts a most successful meeting.

Mr. Henry Fuldner, the sixth member of the committee is a civil engineer and is connected with the firm of A. Monsted & Co., building contractors. He impresses you at once as a strong character. He says that all the local committee wants is for those who are coming to Milwaukee to arrive at the stations and they will do the rest. He anticipates a most successful and harmonious gathering.

The Northwestern Meeting.

The annual convention of the Northwestern Cement Products Association will be held at Minneapolis, Minn., January 17, 18 and 19. Preparations are under way for a splendid meeting. In addition to the regular routine there will be an extensive machinery exhibition. The social side will be a feature and the committee guarantee an interesting and profitable time to all who attend the convention. O. U. Miracle is president of the association.

Builders' Supply Men to Meet in Philadelphia

This is the season of the year when the builders' supply dealer enjoys a little rest. It has been a good year for every man in the business, for from the largest city to the smallest hamlet the building operations of 1905 have largely exceeded those of any other year. The balance sheets that are now being prepared will show that every builders' supply dealer who has been up and doing every day attending to the wants of his customers has made more than a good living; in short, he has made a good profit on the money invested in his business, as well as good pay for the efforts he has put forth. From advices that have already reached Rock Products there is every indication that the annual convention of the National Builders' Supply Association which will be held at the Bellevue-Stratford Hotel, Philadelphia, Pa., on February 6, 7, and 8, will record the largest attendance in the history of that body. Every concern in the country who handles builders' supplies is invited to have a representative present and join the association. This is strictly a dealers' association, and the results that it has accomplished for its members are best attested by the enthusiasm of the old guard who came in at the beginning seven years ago. Rock Products hopes to see the whole army of our builders' supply friends turn out on this occasion.

A Wideawake Association.

The National Association of Manufacturers of Sand-Lime Products, which, for short, is called The Sand-Lime Brick Association, held its second annual convention at the Hotel Cadillac, Detroit, Mich., on the 5, 6, and 7 of December. There was a very large attendance; in fact, the whole industry of the country was represented, either in person, proxy or by letter.

The program arranged by the officers was exhaustive and to the point. Much very valuable, educational matter was produced and presented to the assembly by the best array of talent that the country affords. The proceedings were taken in full by an official stenographer, and not only the texts of the papers will be published in the official proceedings for the members of the association, but all of the discussions will be given in full.

A comprehensive report of this meeting is given in another part of this paper. This is one of the live American manufacturers' associations that does things, and if there is any manufacturer of sand-lime brick in this country who has not joined, it is up to him to get into the band wagon quick, for this association develops more practical knowledge directed to the much desired dividend feature than any man can accumulate by his own researches.

Don't Follow Mother Grundy.

It is often a good point in the salesman not to believe all he hears. Occasionally he finds a cement man who says: "So and so has been making quotations right and left of less than market prices," but, like Mrs. Grundy's gossip, the information he secures is from a party who is interested in breaking the market if he can and leading him to believe that the case in point is different from what it actually is. It is an old trick of the buyer to work one salesman against the other, but it is a smart salesman who is from Missouri and is an excellent listener, but never gets excited about what the other fellow is doing, and thus sells his goods on their merits and is not disturbed by every rumor that the price has been cut five cents a barrel.

In practically every case the cement salesman has a good class of goods to sell and he can sell it upon its merits without following the trail of the other manufacturer. The fellow who is willing to cut the price always can not do all the business. He may get some of the orders; he may sell the full output of his factory, but the salesman gets the top of the market who delivers high grade goods and promptly as possible and never falls down on his customers when demand is large for cement and is the fellow who is always welcome and nine times out of ten will sell his goods just as easily as the man who is willing to give each customer, because he is a dear friend, just a little off the top.

In the long run the dealer is benefited by the staple, reasonable price no matter what it may be, for he cares not as a general thing what goods cost providing his competitor is not able to sell them cheaper than he is and experience in selling cement has been generally so satisfactory to the dealer, owing to the heavy margin that the cement salesman is a friend of the family.

ST. LOUIS CHAT.

While down in St. Louis recently, as has been our usual custom, we dropped in at Caesar's at lunch time and there we found Mr. Frank Hunkins, president of the Hunkins-Willis Lime and Cement Co. At his right was Colonel Cobb. A few minutes later in dropped Mr. Phil Dauernheim. Well, they talked it over, lime, cement and plaster. They are in the builders' supply business at St. Louis, of course. Around this board sit architects, contractors and Joe Kelley, he of brick contracting fame. He talks right from the shoulder. He says he is thinking about going to California to get rid of some of the brick competitors who did not know profit when they saw it. Mr. Kelly is interested in the Mound City Roofing Tile Co., with Colonel Hunkins. Say, you ought to drop in to that table sometimes and hear what happens to the consumer. I expect he pays a good premium for his lunches. Well, he ought to.

The year in builders' supply lines in St. Louis has been a good one, and these three gentlemen have done the bulk of the business. Everybody will be happy that that is so for they are high class business men.

I saw Secretary Dugan, of the Acme Cement Plaster Co. Dugan is young, enthusiastic and a great believer in the 27 different varieties of Acme plaster. He says: "Our new mill is a Jim Dandy over at Grand Rapids, but we have others just as popular. Well, I will show you the figures, but I don't want you to print how many tons we are behind in our orders." And this was December 1. "but then Acme plaster sells the year round and we always endeavor to take care of our customers as fast as we can," he added.

E. R. Stapleton, general sales agent of the Iola Portland Cement Co., was on a visit out in Iowa. You know somebody bought a few thousand barrels of cement, for Staple don't go after them in homeopathic doses, and with the big increase in the cement producing power of 1906 he is looking after expenses.

S. J. Vail, of the Whitehall Portland Cement Co., who now makes his headquarters at Toledo, owing to the necessity of visiting the trade oftener, has given up his Chicago office. He was in Philadelphia the other day making plans with General Sales Manager Greene for next year's campaign, and adding a few more good customers for Whitehall cement. Sales Manager Greene, in speaking of 1905 business, said: "Whitehall has never been so famous and it looks like, from the friendly relations with our large list of customers, that there will have to be something done towards increasing the capacity owing to the excellent run of orders for Whitehall."

G. P. Schwab is now connected with the Kelley Island Lime Transportation Co., at Cleveland, and will travel for them in 1906. Mr. Schwab is a good hustler and no doubt an increased demand for Kelley Island lime will be the result of his efforts.

H. B. Lyman, of Lafayette, Ind., is installing a new yard. He is a hustler and is well and favorably known in the trade.

Manager Zieperling, vice president of the W. G. Hartranft Cement Co., Philadelphia, reported that Phoenix and Old Dominion Portland cement had been unusually popular during 1905, and he was of an optimistic turn of mind and expected 1906 to see a great business. Their contracts are largely with railroads, government, bridge and heavy construction work, and from the prospects of railroad building and other large operations 1906 ought to be a winner. Mr. Zieperling has another favorite theme and that is ostrich farming. If you want to buy birds of a feather just ask Mr. Zieperling about how they do it.

President W. J. Prentice, of the Castalia Portland Cement Co., Pittsburg, says: "We will close our mill down January 1 to make some changes and introduce new machinery. This is the sixth time we have had to increase our capacity to take care of the dealers' trade."

This is a plant at Bletigheln, Germany, which manufactures what is known as artificial pumice stone. The name of the concern is the Schumacher Co., and they manufacture a variety of kinds of this article, ranging from No. 1 to No. 5, which are used on various substances for making smooth surfaces. The stone is composed of a mixture of sandstone and clay.

From Our Own Correspondents.

GREATER NEW YORK.

NEW YORK, N. Y., December 14.—The bricklayers' unions of Greater New York made an agreement with the Mason Builders' Association, to go into effect January 1, and to last two years, whereby the present rate of 70c per hour, and double pay for work done over-time and on Sundays and holidays, is maintained. The fireproofing clause which has set the local unions in direct conflict with and rebellion to the head international union, is retained. This prevents subletting of the installing of fireproof brick partition walls, arches and floors and keeps all that work for the bricklayers, and it now constitutes about 65 per cent of the total work done by them.

This arrangement has made the hollow tile block fireproofing so expensive in New York, that contractors have taken to using concrete blocks. But this loophole of escape did not long remain open to the contractors, for the Mason Builders' Association and the unions have got together on the subject and have agreed to apply the same arrangement to concrete blocks also, so that they will be set by themselves only, and at 70c per hour.

On December 11, the International Union of the Bricklayers suspended all the local unions in this city, except Local 37. There are eighteen unions of Bricklayers with a membership of about 10,000 in New York. They were suspended because, according to their agreement with the boss mason builders, they have steadily refused to work on any building where the hollow tile fireproofing is sublet, even though the sub-contractor pays union wages and lives up to all the union conditions. Local 37 is excepted from this suspension because they did not side with the other unions on this question. The suspension means that the cards of the members of the local union will not be recognized elsewhere, and they will forfeit some 15- or \$20,000 that they have subscribed to the treasury of the international union. The outcome is looked for with considerable interest.

Cement Has Improved.

The cement market has continued its good tone throughout November and down to the middle of December. No one is keeping up with the customers' requirements and everyone has a like story of unfilled orders. This is a very strange condition for the last month of the year, but the good weather has helped everything along, the moderate temperature and absence of rain enabling work to be done fully as well and as economically as in any other season of the year. The exceptional weather has spurred the builders and contractors to unusual exertion, which has, in great measure, helped to keep up the strong tone of the market. Prices are holding at from a minimum of 95c to about \$1.05.

Cement Fence Post Leading.

The Patent Office Gazette says that the non-refillable bottle, which has held the palm for number of patents, must look to its laurels, for within a short time, and up to date, 139 patents have been issued for cement fence posts.

Brick Trade Has Been Good.

The brick trade has held up well through November and into December. Common bricks, Hudson River, have even gone up somewhat, and are quoted at \$9.50. The good weather, with almost no rain, has helped the yards out immensely, and yet it has not produced any over-stock, everything arriving being promptly taken up, and a ready market being also found for all the second-hand bricks that have been put on the market during the summer, due to the tearing down of so many buildings to make way for railroad improvements.

All Asking for More.

Almost all the trades have put in demands for higher wages, beginning January 1. The plasterers have asked for \$6.00 per day, painters \$4.50, carpenters \$5.00, metal workers \$5.00, tile layers \$5.50, and so on.

Working Better Than the Old Men.

The House and Bridgesmiths, by refusing to have their strike against Post McCord arbitrated, have been read out of the Arbitrators' Association, and their places have been filled by non-union men. So far the other unions have worked with them smoothly, and the employers say that work is proceeding much more rapidly than it ever did before.

Lime Trade Continues Steady.

Mr. Perry, of the Rockland Rockport Lime Co., said: "Business is just the same. There is no let up to it; they keep right after us for more and more. November was the second best month of this year, and was 56 per cent over November of last year. Barring unforeseen troubles the winter is likely to be good, and next year promises well also."

The J. P. Kane Co., general building materials, 287 Fourth Avenue, report an excellent business this fall, which is yet holding up well. They are furnishing the supplies for a number of important jobs, among them being the McCreary building, Altman's and the Chemical Bank.

Slag Cement Plant Under Way.

The Curtin-Ruggles Co. have made their first shipment of machinery for the plant they are building in Monterey, Mexico, for the Compania Fundidora, and their engineer is now on the ground at Monterey erecting the buildings. The slag cement plant at Buffalo for the Niagara Cement Co., which they are building, is being pushed with all possible haste, and they have hopes of having the buildings enclosed by January 1. This will be one of the largest and most complete plants of the kind built by the Curtin-Ruggles Co.

The Naval Academy Takes the "Cheshire" Lime.

At the office of the Farnam "Cheshire" Lime Co., 39 Cortlandt Street, Mr. C. J. Curtin said that the demand generally, especially in and around New York, had been way beyond all previous records. Among a large number of miscellaneous orders the company had closed a big contract for all the plastering to be done on the new dormitory of the Naval Academy at Annapolis. It amounted to about 5,000 barrels, which will keep that end of the construction a-going all through the winter. This line was presented for completion among ten other brands, and Col. Dodge selected this despite a heavy freight rate of \$1.84, in addition to the price which was above that of all the other brands. The company is now having installed up at their works a tram system to convey the rock from the quarry to the kilns. This is being done by the Trenton Iron Works, of Trenton, N. J.

New Factory Will Soon Be Going.

Clifford L. Miller, 125 E. Twenty-third Street, is pushing the work on his new plaster factory in Brooklyn and he hopes to have it ready by the first of the year. It will be very complete and will have the most recent machinery in the plaster making line. The mill itself will be of concrete construction, and it will have a shed built of yellow pine with an iron roof which will hold 20,000 tons of rock.

Saving Up for Spring.

One plaster manufacturer said: "I am not pressing sales just now; in fact, I am holding off a little and letting those who will, take the wind-up of the season's business. Stone is scarce and will be more so during the winter, and I am saving my stock to be able to take advantage of the better demand that will come in early spring."

They Want to Know.

Some enquiring bodies are asking when the National Lime Association will render its report in the matter of the \$100.00 prize.

Hollow Block Freight Station.

The Concrete Building Block Co., of 45 Clinton Place, Newark, N. J., completed on or about November 15, the freight depot they were building for the Lehigh Valley Railroad, at Poinier and Alpine Streets, in Newark. The road is now occupying it and it presents a very neat and trim appearance. Mr. Hill said that it was, as far as he knew, the first venture of a railroad company in that line, and that it had excited considerable interest, some railroad men coming from Philadel-

phia to inspect it, and that they were all pleased with it.

Coming Around All Right.

Mr. Noyes F. Palmer, 150 Snediker Avenue, Brooklyn, said: "You might make a note of the fact that the hollow block business is particularly making its way with technical architects and engineers. I notice it now more than at any period of the industry's existence. As an engineer remarked to me the other day: 'The hollow block is here with both feet and to stay.' Some architects and engineers of the very highest skill and repute have been inquiring into the subject with me recently—men, who two years ago never considered that the industry even existed. It is all working around right."

Can Show Some Fine Houses.

At the Milwaukee Convention there will doubtless be a good array of block machines, commensurate with the rapid growth of interest in the industry. Some of the localities from which these machines come have more or less to show in the line of completed buildings of hollow block. But whether New York and vicinity will be represented there or not, it is still a fact that in this city may be seen the "proof of the pudding" in the number of first class houses of that material, not to speak of the number of smaller fry buildings; while almost within the lines of New York City is a house of hollow blocks built by New York men and machines which will cost \$350,000.00 when fully completed.

Stayed Till He Got It Well Under Way.

Mr. L. T. Leet, of the Avram-Leet Engineering Co., returned to town on the 8th of December from Rochester, where he had been since September 1, installing the entire plant for the Rochester Composite Brick Co. Mr. Leet states that all the appliances going into the system are the special design and equipment of the Avram-Leet Engineering Co., who have secured the exclusive right to the processes developed by Mr. Leet during his past five years' costly investigation and equipments. He further states that the plant is now running full and turning out a stone brick of a very superior quality, and that it is now operating one four-mold press and another is expected to be installed soon, and that the company have already secured orders for high grade face brick for New York City.

Mr. Leet will leave New York on December 15, for a trip to California and the west coast, combining business with pleasure, and expects to return to town by the end of January.

Sand-Lime Brick for Pine Face Work.

Mr. J. Bergesen, the general manager of the Schwarz System Brick, 24 State Street, was taken sick on November 7, and was confined to his bed for the remainder of the month, and for the first days of December, but by the 5th, he had recovered sufficiently to return to his office work again. The company has issued a descriptive folder, and if you are interested in the manufacture of sand-lime brick it will repay you to read it. A letter under date of December 2, from the Sand-Lime Brick Co., of Philadelphia, using the Schwarz System, says that they have secured the order for the face brick to be used in the big building at Broad and Walnut Sts., and are now making deliveries independent of all personal considerations, this is a big card for sand-lime brick generally that it should be selected for face purposes in such an expensive building in what is absolutely the finest location in the city and in competition with all strictly first-class materials. It is a striking demonstration of the healthy growth of the industry.

Will Look After Sales in New York.

Mr. E. A. Westerfield, who is now looking after the details of the business in the office of C. J. Curtin, the Eastern representative of the American Sand-Lime Brick Co., reports that he has been extremely busy since taking up the new position, and reports that at the present time he has two new companies organized and will at once start the erection of the plants for them, and also that the general public are deeply interested in that subject, and that the prejudice that had existed up to a year or so ago against that material is fast passing away; investors, builders, contractors and architects are developing a strong interest in them which is going to bring them to the front very quickly. Reports from the Newburgh plant, the first one built under the American Sand-Lime Brick Co.'s system, are to the effect that they have more orders on their books than they can fill in the next six months."

Drier for 120 Tons Daily.

The American Process Co. is making continual progress with their special make at direct heat driers, and have just completed a large order to a point on the Atlantic Coast for an equipment to handle 120 tons per day of high grade silica sand, and replacing an old style indirect heat drier which had until then, been in operation there. With the new drier the amount of output is largely increased and the material is handled much quicker and at lesser cost.

Something New in Driers.

Mr. D. P. Carritte, of the U. S. Drying Engineering Co., 66 Beaver Street, reports a complete installation for a fertilizer material company for drying hair and leather scrap and ammonia tankage. Mr. Carritte says: "It is our new type of drier, of a special design and containing a number of new ideas. It contains our patented internal disintegrator which makes it especially adapted to the handling of clayey and adhesive products, the effect of which is to reduce the time and cost of the drying process by one-half as compared with the old style applications. It will be the first plant installed in this country for the utilization of the by-products and refuse from tanneries, hat factories and bone manufacturers. I know that a number of people in those lines are interested in the matter and I expect that its results will be carefully followed up and noted."

Gas Producer Plant.

The Backus Water Motor Co., Newark, N. J., who are makers of the Backus Gas Producer and gas engine, working either singly or in combination, report that they are installing a 50 h. p. producer gas plant in Philadelphia, and have started another plant in Jersey City, operating at a cost of less than 70 per cent per day for fuel consumed; also two more plants, one at Jamaica Plains, Mass., and the other at Mt. Vernon, N. Y.

Produces Gas From Green Wood.

An exemplification of the growth of the gas producer idea may be instanced from the fact that the J. R. Alsing Co. has now on hand five estimates for equipping as many plants of different kinds with gas producers. They are relatively 75, 175, 200, 500 and 750 h. p. From the number and interest of the inquiries on the subject the company states that it is clearly indicated as the coming mode of generating power.

The Alsing Co. also states that it has some special designs of its own pertaining to the system of producing gas directly from green wood. In three of the largest plants mentioned above the wood for this purpose is to be procured from the land surrounding the plant, and is a matter of economy, not of necessity; for coal can readily be procured at those places, but the wood will be as it is more economical. In the two remaining plants coal will be used.

To Be Run Entirely By Producer Gas.

The Utilities Combustion Co., 60 Wall Street, have arranged to equip the Diamond Portland Cement Co., of Middlebranch, Ohio, with their process for operating a gas producer. Mr. Ellis says that it is expected that a large increase of output, and economy of fuel, will result from this installation. At present pulverized coal is almost universally employed for burning cement, but the cement manufacturers are seriously considering the use of producer gas. Mr. Ellis further states that this gas makes a cleaner clinker, giving a better colored cement than coal, and that though cement companies have heretofore tried producer gas intermittently, this company is the first, as far as is known, to run its entire plant on the producer gas system.

Good Reports From the Rotary Lime Kiln.

The large experimental rotary lime kiln of the New York Lime Co., Natural Bridge, N. Y., which has attracted so much interest among lime burners, has just been put in operation, and the experimental tests are now being made. The results to date are said to be highly gratifying, the yield of lime per pound of coal being exceptionally large. The kiln was made by the Vulcan Iron Works, Wilkesbarre, Pa., and is 100 feet long by 5 feet shell diameter. The gas producer used in conjunction with it was made by the Morgan Construction Co., 40 Exchange Place, New York, and is of their standard type, with automatic feed.

Pneumatic Displacement Pumps.

The Ingersoll Rand Co., 11 Broadway, has issued a pamphlet of their compressed air displacement pumps which speaks of its use for shops and

factories generally, taking power from the local plant. There is no separate pump house to be maintained and its operation is controlled in the boiler or engine room. It can not freeze in the coldest weather, even if working under ice, and it pumps muddy, gritty water without injury, and handles oils, acids, solutions and all liquids. It requires no oil or other lubrication, and has no stuffing boxes or packing, or pistons or plungers to wear out.

Their Mills Go Readily.

The Kent Mill Co., 170 Broadway, have shipped two of their mills to the Wyandotte Portland Cement Co., of Wyandotte, Mich., and have sold two mills to G. Ober & Sons, Baltimore Md., which are to be used for fertilizer purposes. Their foreign trade continues to respond well, they having just shipped one mill to W. J. Kingsland for Japan, and having just sold two to Thos. C. Fawcett, Ltd., London, for fertilizer work.

Cars for Sand-Lime Bricks.

The Atlas Car and Manufacturing Co., of Cleveland, Ohio, is quite busy furnishing supplies of all kinds for the tunnel work now going on in the city. Mr. W. S. King, their Eastern agent at 39 Cortlandt Street, reports the sale of thirty dryer cars for sand-lime brick work to the Peerless Brick Co., 118th Street, and E. R., with the probability of more being called for.

Another Scale Wanted.

A second order for a 2,000 pound ore scale has been placed with the Richardson Scale Co., through the Allis-Chalmers Co., by the Mineral Point Zinc Co.

SYRACUSE, N. Y.

SYRACUSE, N. Y., December 20.—One of the largest manufacturers of building material in New York State is the Paragon Plaster Co., of this city, at whose plant is made Paragon wall plaster, sandstone brick, concrete building blocks and cold water paint. This concern was the first to manufacture concrete building blocks in this city, a foundation for a brick block in South Salina Street, having been made thirty years ago. The company is now turning out concrete blocks for the new Carnegie library at Syracuse University, work upon which has already been started. This building will cost in the neighborhood of \$150,000.00 and will contain 100,000 two-piece blocks made by the Paragon Co.

The company carries the largest variety of building materials of any concern in New York State outside of New York City, including all kinds of wall plaster, cement, white lime, calcined plaster, fire brick, fire clay, expanded metal lath, sewer pipe, wall coping, drain tile, brick, fire, building and sea sand, kaolin, asbestos, talc, and roofing tile and other materials. The Paragon Co. evolved a wood fibre plaster six years ago and refutes the statement by some manufacturers that wood fibre is anything new, as 17 years ago the company used wood in its plaster, but at that time the demand seemed to be for a hard wall plaster and after a short time wood was eliminated until six years ago. The officers of the Paragon Co. are: President, Jacob Amos; vice president, A. E. Nettleton; treasurer and manager, W. K. Squier; secretary, W. F. O'Connor.

Frank C. Sargent, of Syracuse, has secured options on the Whiting farm in Cicero, which contains one of the best deposits of limestone in Onondaga County. He will organize a company with \$100,000.00 capital which will engage in the business on a large scale. At first all the output will be used on the barge canal and later building stone will be turned out.

Prof. T. C. Hopkins, of Syracuse University, has made a report of the limestone quarry on the line of the Syracuse and South Bay railroad near Cicero. He finds the limestone to belong to the variety known as dolomite which is a double carbonate of lime and magnesia. Prof. Hopkins finds that the upper heavier layers are adapted to rough masonry of all kinds, such as foundations, bridge abutments, culverts, retaining walls, etc., while the thinner layers will make good ballast for roads and a good road material for macadamized roads.

The Syracuse Mantel, Tile and Marble Co. has a large contract at Phalen's Hotel in Utica, where they are putting in 1,000 feet of tile flooring and a quantity of marble wainscoting. The same company has a contract on the new Franciscan convent in North Salina Street, and in the Carnegie & Lyman Building at Syracuse University.

The Alexandria Bay-Clayton Boulevard Co. has been incorporated at Watertown to construct a boulevard between Clayton and Alexandria Bay, twelve miles along the St. Lawrence river. The directors of the company are: R. P. Grant, A. P. McKinley, W. H. Rees, of Clayton; H. A. Cornwall, A. R. DeYoung, C. A. Van Brocklin, Walter Fox, John T. Delaney and W. H. Marshall, of Alexandria Bay.

The death of Charles Hubbard, a director of the Paragon Plaster Co., and a prominent business man, occurred last week.

CHICAGO, ILL.

CHICAGO, ILL., December 19.—No snow of consequence or severe cold weather, up to this date, has favored the building trades, and those engaged in the sale of building materials have met with an encouraging market. All builders and contractors and dealers in building materials say the outlook for building operations next season was never better.

The prices of all building materials are very firm, and many predict that higher values are sure to come.

There is every prospect that prices of lime will be higher, and the dealers say the price to be fixed and to go into effect will be 90 cents per barrel after the first of the year.

The George A. Fuller Co. has just been awarded the concrete caissons for the new \$5,000,000.00 courthouse by the county board. The contract price is \$220,000.00. The caissons will go down to bed rock any where from 70 to 120 feet in depth. Work will commence as soon as the present structure is cleared off, which will be in the course of two or three weeks.

The Gravel Industry.

The gravel business for the season has closed and all the pits lying to the south of this city and extending into Indiana have closed up tight. Mr. F. W. Renwick, general manager of the Chicago Gravel Co., says the season's business has been by far the largest and best in its history. Contracts multiplied during the year, and with an extra force of men the pits presented a busy scene all the working days of the year, and for the most part, seven days in the week.

Work will be resumed early in the spring, and pushed to the utmost as many contracts, especially railroad contracts for gravel ballast, remain to be completed. The company now own nine plants and up to the time of shutting down were shipping out 400 cars of gravel per day. The company is now cutting a drainage canal, 30 feet wide and 10 feet deep at Harvey, Ill., and to aid them in this work the company has brought a new 90-ton shovel, having a 45 ft. boom, one of the longest of the kind in use. When this drainage work is completed 1,000 acres of land will have been reclaimed. The season's work has been all that could be desired, and good profits have been made. The next season's promises are exceedingly flattering.

Something About Lime.

The lime business feels the effect of the advancing season, and trade in this line has materially fallen off. The lime men assert that the season's business has been highly satisfactory.

Mr. H. M. Boice, secretary and general manager of the Stearns Lime and Stone Co., the oldest and best known firm here, says business, but not prices has been up to expectations. This firm is not affiliated with any of the lime organizations here. It is an entirely independent company. Their lime is manufactured here and is fresh every day. The company claims their lime is the best and will yield more than any other lime sold in this market. The company has always had a high standing.

The Union Lime Co., Chamber of Commerce building, report the season's business large in the aggregate and on the whole satisfactory. When the next season opens buyers will have to pay more for their lime than they have been paying, for it is now said that prices will be advanced to 90 cents per barrel on and after the first of the year. The tendency in the price has been upward for some little time, but outside arrivals of lime, especially lime from Wisconsin, has held the price in check.

The Building Trades' Supply Co., in the Chamber of Commerce building, talk of advancing prices in building trade circles, and say that several lines of building materials will rule considerably higher during the coming year.

The outlook for a continued brisk demand for all kinds of building material were never better

than at this time, and every one in the trade is exceedingly hopeful over the good business and building prospects ahead. At most of the building trade offices the future is the talk; at the present time, with cold weather at hand, a good many things are inactive.

A Strong Firm.

The Contractors' Supply and Equipment Co., Old Colony Building, has had an exceedingly prosperous year. The firm has made great strides during the year now closing—successful, indeed, beyond the most sanguine expectations. Mr. March says the outlook is bright for the coming year, and the firm is making preparations to fully meet all demands purchasers can make upon them, and in the most expeditious manner. Stone crushing machinery and concrete mixers will probably be in larger demand even than this year, as many men in the interior have expressed an inclination to go into this business.

LOUISVILLE, KY.

LOUISVILLE, KY., December 18.—Among the industries which have had a most prosperous year in this section of the country are those under the head of concrete, lime, sand, etc. The present year's demand for Portland cement in this city has never been so great as during the year 1905. This is due, of course, to the increasing number of structures in which Portland cement is a factor. Among these may be mentioned the Belknap Hardware and Manufacturing Co.'s office building, which is being constructed entirely of reinforced concrete. In addition to this there has been erected a number of concrete block houses, and various kinds of concrete work of more or less size which have called into use a good quality of this commodity.

The present year has not been the most flattering for the natural cement manufacturers and the demand has not been as large as they would have wished, although they have had a pretty fair business, all things considered.

The number of structures of various kinds which have been erected during the present year has been quite large and the amount of lime, plaster, builders' supplies and other commodities which enter into the structures have been called for in a way which has been most satisfactory. The present prospects point to a much more prosperous year in 1906, and the structures now which are contemplated will fully verify this statement.

J. B. Speed & Co., who have been so long identified with the natural cement industry in this section of the State, have completed their Portland cement plant at Speeds, Ind., and have begun the manufacture of the highest class of Portland cement. This will not be placed on the market, however, until spring, as they state that it shall be thoroughly seasoned prior to its being placed on the market. In speaking of the matter, Mr. Gray said that they were amply satisfied with the progress made in this respect and were confident that their Portland cement would meet with popular approval as they intend to put only the very best on the market. Speaking of the present year's business, he stated that it had been highly satisfactory to them in every respect and while the demand for natural cement had not been as large as they would have liked, still it was sufficiently so to make them feel encouraged, and he believed that the future for this commodity was even brighter than it had been for some years. Regarding the lime business, he stated that they had had a particularly fine trade all the year and were at present very busy in this department. He said that he looked for a good year in 1906, and with their Portland cement plant in operation they expected to do a very large business in the next twelve months.

At the office of the Western Cement Co., Mr. Courtney, secretary of the organization, said the year had been satisfactory with them and the volume of business had been reasonably large. This company handles only natural cement and they look forward to a greater demand during the coming months than they have had, and are satisfied that the same will be forthcoming. Mr. Courtney is an authority on natural cement, and has written extensively upon the subject, and is confident of its value as a building material where underground operations are desired, and has many advantages over Portland cement. This has been demonstrated on many occasions to the satisfaction of a number of interested parties.

The Utica Lime Co., which handles the greater part of the output of the Union Cement and Lime Co., which are kindred organizations, report that they have had a most satisfactory year for cement and lime. While the Utica Lime Co. handles Portland cement, the Union Cement and Lime Co. manufacture only natural cement, the demand for the latter has only been fair. Speaking generally, however, the business as a whole has been in every respect gratifying, with indications for a much larger year in 1906.

The Southern Roofing and Paving Co. have enjoyed the best business in their history during the past twelve months, not only on concrete work in which they have had a number of exceptionally nice jobs, but also on roofing. They have been kept busy up to the present time, and still have enough work to carry them well into the new year, which they are satisfied will be even greater in the way of business than the present year has been.

The National Concrete Construction Co. report about the same conditions as a month ago, they are still busy on numerous large contracts taken late in the fall, and are making great progress considering the weather interruptions, which has deterred them to some extent. They are figuring on considerable work next year, and look forward to doing a nice business. They expect to greatly increase the character of their work next year, and are fully satisfied with the present year's business. Mr. J. O. Ohlischlager was absent from the city when we called. He was at Corbin, Ky., overseeing some work they have on hand.

The Fitch-Troxell Co. has just completed a large job of concrete construction for the Todd Manufacturing Co., of New Albany, Ind. Mr. Troxell said they had enjoyed a good year's business, but were not particularly rushed at the present time, but were looking forward to a nice business in 1906. One of the new features added to their business recently is the manufacture of concrete building blocks, and they have had a nice business in this line during the past few months. Further than this, they had nothing particularly new to report.

The National Roofing and Supply Co., notwithstanding the fact that it is quite late in the season, have all they can do in roofing and concrete work. They have had a splendid year, and while they make a specialty of composition roofing, they also do considerable work in the concrete line. The indications are most favorable for continued active business, and they are amply satisfied that these will materialize.

The Falls City Artificial Stone Co. are finishing up a number of nice concrete jobs taken some months ago, and have sufficient indoor work to keep them busy for some time to come. Indications for the new year are most favorable for this organization, and they expect to largely increase their operations for the coming months.

The Concrete Building Block Co. are still manufacturing concrete blocks on the H. S. Palmer machine. They have had a fair year's business in concrete block construction, and have erected a number of houses in this section, and in addition to this have done numerous smaller jobs. They expect to enlarge their operations considerably next year, and are confident from what they now see that the demand for concrete blocks will be largely in excess of that which has ever been known in this section of the country.

The Kentucky Wall Plaster Co. report conditions about the same as has been for some time. This means that they are still about as busy as can be and the demand for their hard wall plaster is continually increasing. The year for their operations has been most satisfactory, and both of their plants have been kept in continuous operation all the time.

W. F. Nugent & Bros., large dealers in Ohio river sand and gravel, report that conditions with them are in every respect satisfactory, and the year's business has been especially large. This is due, of course, to the large amount of building and street work throughout this section, and they look forward to one of the largest years in their history during the coming twelve months.

The Ohio River Sand Co. are still quite busy at their large plant supplying river sand and gravel for numerous purposes. They have enjoyed a most prosperous year, and are well pleased with the indications for the coming year.

The Louisville Fire Brick Works are just as busy as have been for some time, and are now turning out 50,000 fire brick per day. Among recent improvements made at this plant is the addition of two kilns and a grinding pan. They expect to

greatly increase their output in the very near future. They are working full time, and have had an excellent year, with indications for a much larger output during the year 1906, and are more than pleased with conditions, and are extending their field of operations very extensively.

MEMPHIS AND THE SOUTHWEST.

MEMPHIS, TENN., December 15.—Eleven large undertakings, including a million dollar courthouse, are definitely in sight. A building supply man said: "There is enough work in the architects' rooms right now to keep the Memphis trade busy for a year and perhaps for two years."

Steve Wright, of the Wright Lime and Cement Co., said the winter trade in Memphis on building supplies was unusually good.

MISSOURI.

A \$50,000.00 sand company has been organized at Waverly, Mo., by J. R. Tuscon, Wm. Matthews, of Kansas City, and S. J. and H. G. White. This company owns 100 acres of good building and plastering sand. They are assured of success for the reason it is a natural formed sand vein and they do not have to depend upon the Missouri river for their sand.

Emery C. Hodges, of Bloomington, Ill., has been exhibiting at St. Joseph, Mo., a system of interlocking building blocks which he has invented. Mr. Hodges, in his efforts to interest local capital dealing through the Security Business Co., S. Marke, manager. Mr. Marks says he believes he will have no difficulty in financing the enterprise. The blocks, it is said, are especially adapted for use in large buildings, where double walls are necessary. By means of the interlocking device, the two walls may be fastened together, giving from six to eight inches of air space between them, thereby making the entire structure perfectly dry and healthful.

A meeting has just been held of the Chillicothe (Mo.) Vitriified Brick Co. at the office of Gunby & West, when it was decided to go through with the organization of the company and make arrangements to have the new plant in operation by next spring. W. H. Sipple was chairman, and A. J. Fitzpatrick secretary of the organization.

The Kansas City Portland Cement Co. are beginning the erection of one of the largest cement mills in the West at Kansas City, Mo. A ready market awaits their output. F. E. Wear is president of the company. W. H. Caffery is vice president and general manager. W. A. Rule is treasurer.

ARKANSAS.

E. N. Weizel, of the Hydraulic Sand and Stone Co., has secured by contract the county convict labor to work at his rock crusher, near Little Rock, during 1906.

Leiper & Mills, manufacturers of White Star lime, and dealers in cement at Little Rock, are finding a lively business in Arkansas' capitol incident to big construction work.

The Arkansas Slate and Supply Co., of Little Rock, with a branch office in St. Louis, has been chartered with a capital stock of \$300,000.00, of which \$270,000.00 has been subscribed and paid in. It is St. Louis capital back of the project, furnished principally by A. L. Shoults, and Wm. Conway. The officers are A. L. Shoults, of St. Louis, president; W. L. McHaney, of Little Rock, vice president; S. M. Leslie, of Hot Springs, secretary; G. W. Hendricks, of Little Rock, treasurer. The company controls a very large area of valuable slate lands near Hot Springs on the Garland Western, and it is proposed to take immediate steps toward its commercial development.

KANSAS.

A new plaster company has been organized at Blue Rapids, Kan., to be known as the Blue Rapids Gypsum Co. Directors for the first year have been named as follows: Perry Hutchison, E. R. Fulton and W. W. Redmond, of Maryville; A. J. Piper, of Irving; G. A. Johnson, of Blue Rapids. Capt. Hutchison is named as president. E. R. Fulton is treasurer, and the secretary has not yet been selected. Those in charge hope to have the tunnel completed to gypsum in a very few days, and then the work will be started on the foundation for the building, the stone for which is already being quarried. The credit for the organization belongs chiefly to the untiring efforts of G. A. Johnson.

The Horton concrete people have practically closed a deal whereby they will erect 52 concrete cottages for the Kansas Portland cement companies at Independence, to be occupied by the employees of the company. The buildings are to be built at Table Mound, five miles northwest of Independence, the site of the Kansas Portland works.

J. M. Bickel and associates contemplate putting in a 150 ton hard plaster mill in Anthony, Kas., which will employ fifty or more men.

TEXAS.

E. C. Long, of Galveston, is behind a movement to locate at Oak Cliff, a suburb of Dallas, a sand-lime brick plant.

Frank E. Ring, of the Hayden Automatic Concrete Machine Manufacturing Co., of Columbus, Ohio, has been at Galveston looking into the matter of putting in a plant to make concrete blocks. Mr. Ring has the Kansas and Texas agency for the foregoing company.

The San Antonio Sewer Pipe Co., of San Antonio, Texas, is shipping in some large culvert and well piping contracts now.

THE TERRITORIES.

At Muskogee, I. T., the Muskogee Vitriified Brick Co., has closed down after a meeting of the stockholders of the company for the reason that the brick used in buildings going up in the city are purchased from outside brick companies, and the company would rather close down than lose money.

The Oolitic Stone Co. has purchased the Bernstein brick plant near Kingfisher, O. T., and will remove it to Ada, O. T.

The Stringtown Asphalt Co., with office at Coalgate, I. T., has been incorporated with \$100,000.00 capital stock. S. W. W. Pomeroy is president; W. J. Williams, vice president; and Frank Burgess, secretary.

ARIZONA.

PHOENIX, ARIZ., December 18.—Local dealers in builders' supplies have not been rushed this year, nor indeed for several years past. Ever since the building of the Tonto reservoir at Roosevelt, by the United States government, has been an assured fact, a boom in building operations has been confidently expected, but up to present time has not arrived. However, it is certain to come, sooner or later.

But the question is, when is the new order of things to begin? Local dealers, contractors and real estate men have expected it before now. The government contract calls for the completion of the dam at Roosevelt up to a point 150 feet above the bed of the stream, within 24 months. Up to the present time operations have been confined to the building of the power plant and its waterway from the mouth of Pinal creek, and work on the dam proper has just begun. Its total height will be 260 feet. Just when the remaining 119 feet will be completed nobody can now tell.

In the matter of concrete construction here, only the sidewalks in the business section, and for a short distance out Washington Street, are of concrete, while it is very little used in building operations. An effort was made to make and market concrete blocks here, but it ended in disaster. The cause for all this is found in the high price of Portland cement, which practically prohibits its use. Most of the cement used here is the foreign article and comes in by way of San Diego. Nearly all the town's supply of the domestic article comes from Colorado. For imported Portland cement the contractor in Phoenix must pay \$7.00 a barrel. Colorado cement costs him \$5.00 a barrel.

When work was about to begin on the Tonto reservoir, government experts estimated that about 100,000 barrels of cement would be needed in its construction. Bids were asked for from a number of foreign and domestic companies. The lowest received was \$9.00 a barrel for which it was agreed to deliver the cement at Roosevelt. A ten-mile wagon haul over a mountain road added considerably to the cost. Uncle Sam thought he could do better than that; so he had his chemists analyze the soil and rock at the dam site, and, acting on their report, built his own cement mill right where the big lake is to be made. The cost of the plant complete was \$91,000.00, and counting every item of expense, cement is now being made at a total cost of \$2.00 a barrel. The quality of the cement is excellent according to government reports, and it is standing very severe tests in the construction of the canals for the power plant.

Government experts express the belief that other localities in Arizona afford equal facilities for the manufacture of Portland cement, but when the Phoenix dealers are questioned as to why some enterprising citizens do not get together and build a plant, they usually answer that the freight rates to other parts of the territory are prohibitive, which indeed appears to be the real reason.

Sand-lime brick promises to cut quite a figure in future building operations in Phoenix. Formerly most of the face brick used here came from El Paso, Texas, and was delivered in Phoenix at something like \$30.00. It cost about the same to bring them from Los Angeles. Now the Arizona Sandstone Brick Co., of Prescott, Ariz., gets its brick in Phoenix at about \$15.00. L. B. Larrimer is secretary of this company. The brick to be used in the rebuilding of Fort Whipple will be furnished by Mr. Larrimer's company.

THE WEST COAST.

SAN FRANCISCO, CAL., December 15.—The Monterey Brick and Stone Co. has just completed its sand-lime brick plant at Seaside, Monterey County, three miles from Monterey. It will be started up at once, with a capacity of 20,000 brick a day, using the fine white beach sand. There is said to be a good local demand for such brick.

The Diamond Sand-Lime Brick Co., of San Francisco, in which W. F. Barnes, who controls the Schwarz system on the coast, is interested, will build a sand-lime brick factory at Stege Contra Costa County, where land has been purchased.

The future of sand brick manufactured on the coast is a subject of great interest to architects, contractors and engineers. A number of sand-lime brick plants have been built in the country surrounding San Francisco, and more money invested than has been taken out thus far. The only plant that has had much of an output was constructed by the Holland Sandstone Brick Co., at Antioch, Cal., which has supplied a large number of brick for the new Monadnock block in San Francisco and numerous buildings in Stockton and elsewhere. The American Magnesite Co. used 700,000 of these brick in its factories at Oakland and a chimney 130 feet in height. A coterie of San Francisco capitalists, including W. G. Irwin, W. S. Tevis and others had sufficient confidence in the system to establish plants at Los Angeles, Bakersfield and Antioch. The Los Angeles plant is not now in operation, but the Bakersfield plant, which is operated in connection with a clay brick yard is doing well, both sand and clay bricks selling at \$9.00 a thousand.

The Holland Sandstone Brick Co., C. W. Coburn, president, has just remodeled its main factory building at Antioch, and installed an additional Komnicke press with a capacity of 24,000 brick daily. The original machine turns out about 14,000 brick a day. The new machine weighs 14 tons and is capable of exerting five times the pressure of the old one. A harder brick will be produced, although the crushing tests already made have shown 95,000 pounds per brick. Clear white sand from the banks of the San Joaquin river, on which the works are located, is used. The supply is inexhaustible, the company owning fifty-two acres of land, with 3,000 feet of frontage on the river, with a depth of 22 feet alongside the company's wharf.

The shipping facilities are ideal by water and rail. A 1½ story and basement rooming house for employees has been built. A new extension of the main factory building will be used as a lime house, office and new engine room. A new boiler house has been built and a 150 h. p. boiler installed. A 90 h. p. engine has been erected. An additional dryer, with three times the present capacity, will be installed at a cost of \$4,000.00. F. W. Muller, an all-around practical brick man with European training, is superintending the works.

Long & Hoyt, representing the Columbian Fireproofing Co., have the contract for fireproofing the new German Hospital in San Francisco, a six-story steel frame and brick building. The materials required include: 1,500 barrels of cement, 1,200 yards of stone and 300 yards of sand. The same contractors have the fireproofing contract for the Lincoln school, in Oakland, a brick building covering an area of 141x177 feet.

The Western Sandstone Co. has been incorporated, with San Francisco as the principal place of business, and capitalized at \$300,000.00. The directors are: E. P. Vandercook, an Oakland real estate man; F. Butterfield, Chas. Searle, A. F. Cornwall and H. L. Miller.

The Bull & Gossard Rock Co. has been incorporated at San Rafael, Cal., by R. H. Renebone, W. D. Gossard, F. P. Bull, Theodore Goodwin and A. Edgecumbe. The capital stock of the company is \$50,000.00, of which \$15,000.00 has been subscribed.

The Pacific Stone Co., which has one section of its works at Black Diamond, Cal., in working order and has demonstrated what can be done, will soon enlarge the plant. It will then be in a position to become a larger factor commercially.

Bids are to be advertised for by Major R. B. Turner, constructing quartermaster of the United States Army at Boise, Idaho, for the construction of twenty-two new buildings at Boise Barracks. All of the buildings are to be of brick and stone, with slate roof and fireproofing. The estimated cost is \$400,000.00, and the buildings are to be completed by July 1, 1906.

The Los Angeles Crematory Association, of which Luther G. Brown is secretary, will erect on Grove Street, Los Angeles, Cal., a crematory to cost \$50,000.00. Plans for the building, which will be constructed of reinforced concrete, have been drawn by Architect Charles W. Whittlesey, and the contract for its construction has been let to Weymouth Crowell.

Architect H. T. Storbuck, of San Francisco, has completed the plans for the new Masonic Temple at Palo Alto, Cal., and they have been accepted by the organization. They call for an expenditure of about \$40,000.00. The building will be three stories high and will be built of buff sandstone and pressed brick.

Prospecting continues at Lime Kiln, Nevada County, Cal., where a force of men have been at work for some time, in an endeavor to ascertain the extent of the lime deposits. The work is being carried out under direction of Barker & Smith, who have assurance that the big ranch will be purchased by San Francisco capitalists and worked on a large scale if the ledges come up to expectations.

The Pacific Portland Cement Co., of San Francisco, has been awarded a contract at \$1.55 a barrel for from 30,000 to 40,000 barrels of cement, which is to be used on the Yuma Irrigation project. Good progress is being made by this company on the construction of an additional cement mill of large capacity at its works at Cement, Solano County.

The Colorado and Denver Cement Co. has decided to erect a cement mill near Corydon, Utah. The plant will cost about \$500,000.00, giving employment to 250 men.

NEW ORLEANS, LA.

NEW ORLEANS, LA., December 12.—The architects are busy with plans for many houses. There are mansions and business blocks, costly hotels and every thing that one can mention in the building line. Almost every thing in the line of building material enters into the construction and it is hard to determine if there is any particular fad or fancy in this line. One thing is marked and that is the character of the structures. There is an air of comfort about them all regardless of cost.

There is a growing disposition here to plaster all the walls. Formerly everything, or nearly everything, except the big fireproof buildings were celled. It seems to be a custom that has come down from the early times from the people of moderate means. The wealthy Creoles had plastered walls and handsome frescoes that are admired even today, and they were applied by artists over a century, and some of them nearly or quite two centuries ago. Many Northern people have found homes here in the past quarter of a century and the home people have visited the North until the Northern ideas of house building and finishing are greatly intermingled with Southern ways.

The Audubon Hotel Co. has been granted a charter. Its purpose is to erect and maintain a hotel. The capital stock is \$1,500,000.00. When it builds a handsome structure will be erected, but no architect has been consulted as yet.

There is quite a bit of rivalry between the granite quarries for the New Orleans trade. The Vermont granite and marble has been virtually supplanted by the Georgia granite. Especially is this so of the Rutland white marble. The Georgia marble is a blue marble in the words of the marble cutters, but to the laymen it would be called a dark gray marble. Of course it is a more solid gray than the granite.

Albert Welblen, one of the largest cut stone and marble contractors for both building and monumental work, is a very busy man these days. Besides his regular monumental custom he has some

contracts for stone fronts that are keeping him busy. He has the contract for building the stone front of the Stock Exchange building, which will cost \$16,000.00. It is of Italian marble with granite base done in the renaissance style. Andry & Bendoragale are the architects. Mr. Weiblen says the outlook for stone work is good this winter.

Samuel T. Gately does monumental work exclusively. Speaking of the cemeteries here he said: "The way we care for the dead here is different from almost any other city in the United States, and visitors here are always interested in it. The placing of the dead in vaults instead of in the ground is less objectionable, especially to those of deep feeling and sentiment. There are tombs here in Metairie that have cost from \$5,000.00 to \$50,000.00. The grandest monuments ever erected are found here. At the entrance of this cemetery is a monument that is remarkable in many ways. It is a plain shaft of granite, rises from a terraced base of granite, and is surmounted by a plain cross. The entire monument stands 80 feet high. At the four corners of the shaft, where it rests on the base are full-sized statues representing Faith, Hope, Charity and Temperance. Each of these figures cost \$1,250.00 to carve. To get the granite blocks of the base to the cemetery it was necessary to build a track from the line of the Illinois Central railroad to the cemetery, and have it brought in by rail. The blocks were too heavy to be hauled on a wagon. It is Barre, Vt., granite. It is erected to the memory of D. Moriarity.

"Quite a demand has grown for the South Carolina granite, a gray granite from the quarries at Rockton, S. C. There is also a good demand for the Georgia granite, which is also a gray granite, also its marble, which is dark blue or gray. There is not much demand here for the Tennessee marble and granite, which is a red or terra cotta color. The Rutland, Vt., white marble has been largely displaced by the gray stone of Georgia."

Shale for Several Uses.

EL PASO, TEX., December 1.—An enterprise of considerable magnitude has just been launched in this city. It is an organization composed of Cleveland, Ohio, capitalists, which is in reality a branch of the Cleveland Material and Improvement Co., and which has purchased several hundred acres of shale land just north of the Texas line in New Mexico. The exact location of the deposit is about thirty miles north of this city, and extends in a northwesterly direction for about ten miles. The shale is mined and afterwards ground to a pulp, from which bricks are made as well as a certain kind of plaster which is used the same as asphaltum. The claim is made that this shale is much more durable for road beds than asphaltum, having at the same time just as smooth a surface. An extensive plant is to be erected in which is to be installed all kinds of modern equipment and operations will begin during the winter. It is believed that considerable of the output will be used for street improvements in various sections of the country, and the outlook, so far as can be learned, is most admirable for the new organization.

Will Manufacture a New Brick.

BRAZIL, IND., December 5.—Operations at the plant of the Ayer & McCarroll Clay Co., a large organization which manufactures a new vitrified pressed brick, are being carried on in a satisfactory way. This company has received a number of nice orders lately for its output, and reports from the sections of the country where the bricks have been used for building, are to the effect that they have given ample satisfaction in every respect. Indications now point to a very successful year, and the company expects to have sufficient orders to keep the plant going to its full capacity for several months to come.

It is also learned that the Brazil Clay Co., a new organization here, has also equipped its plant with machinery for the manufacture of this new vitrified brick, and they are looking forward to having good demand for them, as well as the clay used for this purpose. Clay of this kind is found in very few localities, but large deposits of it are found in and adjacent to Brazil, so that the outlook for the manufacturers here is certainly flattering.

Clay.

Preparing for Big Meeting.

Elaborate preparations are now under way by the committee in charge for the twentieth annual convention of the National Brick Manufacturers' Association and the eighth annual meeting of the American Ceramic Society. As previously announced the organization will hold its convention at Philadelphia, Pa. The convention of the Brick Association will be held from February 5 to 17, while the sessions of the Ceramic Society will be held during the first week of the meeting. This has been the custom of the Ceramic Society for a number of years. It is the intention of the organization to hold but one session each day, which will afford the members and their friends ample time in which to see the sights and the many historical places of the city.

It has been sixteen years since the Brick Association met in Philadelphia and the members who attended that meeting, many of whom are still living, recall the delightful times enjoyed upon the former occasion. These will be considerably augmented during the coming convention, and as there are a great number of interesting sights in and about Philadelphia the meeting will doubtless be both entertaining and instructive.

Arrangements have been made with the Continental Hotel for holding the conventions and an exhibition room will also be provided. The officers of the executive committee of the organization look forward to a large attendance of the members, and it is expected that this meeting will be the largest and most profitable ever held.

Valuable Clay in Minnesota.

The clay deposits of the State of Minnesota are not only extensive but are adapted to several uses, among which are fire clay, pottery, earthenware and ordinary brick. In Mankato county is found an excellent quality of fire clay in large quantities, while in Goodhue county there are vast amounts of clay particularly suited to pottery manufacture. This industry is considered one of the most prosperous and extensive in the State.

The clay deposits in various other sections of the State have long been known and worked in various industries and the supply seems inexhaustible. The organizations devoted to the clay brick industry are very numerous and considering the fact that the timber supply is growing scarcer each year, the value of this building material has become considerably greater during the past few years.

At St. Paul, Minn., is a large plant which manufactures millions of excellent brick annually from what has formerly been considered a worthless calcareous shale. The industry taken as a whole is one of the leading ones in the State and indications are that it will grow in volume and always maintain its present standing among the other special features for which this State is now so well known.

Fine Clay in Kansas.

A deposit of very fine clay has been recently discovered on the premises of C. J. Lampe, in Concordia, Kan. The quantity is quite extensive, and, according to reports, it is very fine for the manufacture of fire brick, cement, tiling, etc., and the clay will be analyzed and if it turns out as well as anticipated an endeavor will be made to interest a number of parties in the formation of a company for the developing of same.

Round Corner Bricks Made.

TOPEKA, KAN., November 28.—The Capital City Vitrified Brick Co. is now manufacturing a new paving brick which has rounded corners. These bricks were manufactured upon recommendation by City Engineer McCabe, and the company has added new machinery for their manufacture. The opinion is that these bricks will wear better than those having square corners.

Fire Destroys Big Plant.

The American Sewer Pipe Co., with head offices at Pittsburg, Pa., suffered the loss of their East Liverpool, Ohio, plant December 20. The loss was about \$100,000.00, but operations will not be interfered with as the company are prepared to take care of their orders.

New Street Paving Brick.

DETROIT, MICH., November 26.—A new paving brick which was recently manufactured and given a test on the streets in this city has been proven highly satisfactory in every respect. The brick was manufactured from Flushing shale and it is quite likely that a new brick plant will be established here and a considerable amount of this shale will be used for the manufacture of these bricks. The sample bricks were manufactured by E. M. Freese & Co., of Gallion, Ohio. This shale is found in large quantities in the State and Commissioner Haarer is satisfied that the brick will give every satisfaction for street purposes.

Looking for Another Site.

ST. LOUIS, MO., November 29.—A representative of a Dayton, Ohio, concern, which operates several vitrified brick plants, made a recent visit to Edwardsville near this city, inspecting the shale deposit with a view towards installing a plant for the manufacture of vitrified brick. It is the intention of the company if arrangements can be made, to expend something like \$100,000.00 in the construction of a modern plant. The matter has not been definitely determined upon as yet, but indications point to a successful outcome of the project.

Has Purchased Another Plant.

READING, PA., November 26.—The U. S. Brick Co. recently purchased the large plant of the Reading Shale Brick Co., at Wyomissing, and will operate the same in connection with its other plants. Possession will be taken after December 1. The Reading plant was erected in 1896 by Hiram K. Getz, afterwards being organized into a stock company with a capital stock of \$75,000.00. The output consists of a hard paving brick and a special fire brick. About fifty men are employed in the plant. The U. S. Brick Co. operates a number of large plants throughout this section of the State, manufacturing various kinds of brick.

The plant of the Columbia Fire Clay Co., Salem, Ohio, was entirely destroyed by fire on December 1. It is estimated that the loss was about \$9,000.00. The principal owner is D. B. Allen, of Cleveland, Ohio. The insurance is not known, nor is it known exactly what disposition will be made regarding the company's future operations.

The Cleveland Vitrified Brick Co., of Oklahoma City, Okla., has been organized with a capital stock of \$50,000.00. T. W. Williams, Geo. Schoelberg and J. L. Wilkin are the incorporators.

The Horatio Fire Brick Co., Horatio, Ark., and Oklahoma City, Okla., was incorporated recently with a capital stock of \$100,000.00. The directors are: W. H. Maddox, Texarkana, Ark.; G. B. Pride and S. P. Bisbee, Oklahoma City, Okla.

The Vitrified Brick Co., of Westport, Md., will shortly begin the erection of a new kiln 65 x 30 feet, and will also have an adjoining shed 50 by 100 feet. The plans for the improvements were prepared by the C. W. Raymond Co., of Ohio, who will also install the machinery for the manufacture of their brick. The improvements will cost about \$5,000.00.

The Cheltenham Fire Clay Co., of St. Louis, Mo., has been organized with a capital stock of \$5,000.00. Jno. W. Gannett, Glanet F. and Stanislaus Mitchell are the incorporators.

The Standard Vitrified Conduit Co., of New York, N. Y., has been incorporated to manufacture vitrified clay conduits, etc., with a capital stock of \$1,000.00. The incorporators are: Wm. P. Chapman, Jr., Chas. R. Ganters and Emory H. Sykes.

The plant of the Hamburg Vitrified Brick Co., at Reading, Pa., which was partially destroyed by fire on December 3d, will be rebuilt by the company as soon as proper arrangements can be made.

Quarries.

The National Quarry Owners' Association.

Meets Semi-Annually.

D. McL. McKay, Chicago, Ill. President
S. M. Hall, Bucyrus, Ohio First Vice President
Chas. Pfeiffer, St. Joseph, Mo. Second Vice President
B. P. Froney, Jacobsville, Mich. Third Vice President
B. H. Delebaugh, Louisville, Ky. Secretary-Treasurer

Official Organ, ROCK PRODUCTS.

LARGE CRUSHED STONE OPERATORS.

Sketch of the Baltes Stone Co., of Fort Wayne, Ind.—To Supply Concrete Manufacturers With Crushed Stone.

Of all the mineral resources of the State of Indiana, perhaps there is none more important than the valuable quality of her limestone deposits. In Northeastern Indiana the limestone is partic-



CRUSHER PLANT, BALTES STONE CO., MONTPELIER, IND.

ularly flinty in its character and lies in thick sound ledges, and for more than a generation from the quarries of this section have come first class dimension stone for all kinds of building purposes, and the many railroads which cross the State of Indiana, have secured an ample supply of bridge stone constructing as perfect piers and culverts as are possible to build.

The gem of all the quarries in Northeastern Indiana is located at Montpelier, only a short distance from the city of Fort Wayne. Many years ago this property was secured by Mr. M. Baltes, of Fort Wayne, the well known contractor and dealer in builders supplies of that city, who had also operated very extensively in the manufacture of lime for a considerable distance down the Wabash Valley. In fact, M. Baltes, as far back as 1860 began to acquire a splendid knowledge of quarry properties. He established and is to-day deeply interested in all the quarrying and lime manufacturing so well known as the Western Lime Co., Huntington, Ind., where Peter Martin, who is a nephew of Mr. Baltes, is the active leading spirit.

An Old Operator.

Thirty-five years ago Mr. Baltes first opened a quarry at Montpelier and later organized the Baltes Land Stone and Oil Co., and for many years operated very extensively, both in the quarry business and in producing crude mineral oil. Last April, the quarry proposition was incorporated under the laws of Indiana, the firm being composed of M. Baltes, Ed M. Baltes, and Theo. C. Schwier, and it was decided to put in a new modern crusher plant.

Mr. Lloyd St. John Smith, of the Allis-Chalmers Co., was called in consultation and a splendid crusher proposition was erected. The elder Mr. Baltes



VIEW OF STORAGE TRACKS AT THE BALTES STONE CO.'S QUARRY.

having had so much experience in the construction of crusher plants, knew from experience that the best is the cheapest in the long run, and both of the younger gentlemen whom he expects to take on the active labors of operations, wanted the best start that good equipment could give them.

The power plant consists of 150 h. p. Oil City engine and two 200 h. p. boilers, and they have provided in the engine room proper for the installation of adequate air compressors and dynamos. The heavy engine rests on concrete piers and the whole floor of the engine room is of concrete, as is also the floor and foundations for the boiler settings. Commodious coal bins are located alongside of the boiler house so that hand stoking is a simple operation and loading the coal bins direct from the car is as easy as can possibly be arranged.

The Crusher Plant.

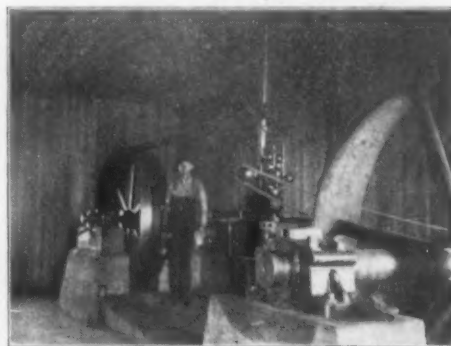
On solid concrete piers reaching to rock bottom are the Gates No. 4 and Gates No. 6, style "K" crushers, and a 48 ft. Allis-Chalmers rotary screen separates the crushed rock which is delivered direct to the cars as desired on all the stone that is too large to pass the rotary screen is diverted back to the crusher for a recrush. The elevator extending from the crusher plant into the quarry is provided with a Quincy hoist of 30 h. p. and equipped with Watt quarry cars built at Barnesville, Ohio, and the double track is arranged so as to feed the crushers as near continuously as such a proposition could be calculated.

Mr. Smith, as well as the experienced owners, and Mr. Thos. Whitman, their practical construction superintendent, are to be congratulated upon the special advantages obtained at this model plant, but when plenty of engineering ability is joined with ample capital, such results are rather to be expected.

Equipment in the Quarry.

Out in the quarry they are using Sullivan and Jeffrey steam drills this season, but next year these will be replaced by air driven drills. There are two boom derricks for taking out dimension and bridge stone, and a bucket arrangement is attached to one for removing spalls and rubble stone. The quarry opening proper at present represents about twelve acres, and every part of it contains good stone lying in regular ledges and one centrifugal pump has been found amply sufficient to keep all the water out of the way of active operations.

Mr. R. H. McCormack, who has been a quarryman all his life and formerly lived at Greensburg, is now superintendent of the quarry work of the Baltes Stone Co. He is a live fellow and knows all the short cuts and keeps a very steady record in the neighborhood of 600 yards of crushed stone running through the crusher in 10 hours, and three carloads of rubble on the siding in the same length of time. The yard system for handling cars con-



ENGINE ROOM IN CRUSHING PLANT, BALTES STONE CO., SHOWING ENGINE ON CONCRETE PIERS.

tains between nine and ten thousand feet of trackage, three thousand feet of which was added this year, the whole system connecting with the Lake Erie and Western railroad.

Their storage track representing a capacity sufficient to hold twenty-five empties and thirty loads. There has been a slight trouble recently in obtaining as many cars as the company could conveniently use, but generally speaking, the railroad people are very clever about taking care of the car requirements of this enterprising concern.

On account of the hardness of the limestone and the flinty characteristics mentioned above the fine screenings make a very excellent proposition for the concrete contractor and the last residuum constitutes a high class torpedo sand. The whole property of the Baltes Stone Co., at Montpelier, consists of ninety-three acres of land; only thirty acres of which is used for the quarry operations.

Besides the crusher plant there is a separate office building, blacksmith shop equipped with a forge for repairing tools, machinery, etc., several boarding houses for the workmen, and barns for teams. Just after the completion of the new crusher plant there was some trouble, and it was found necessary to employ foreign help who reside on the quarry property.

When Operations Began.

Some record time was made in the construction of the new crusher plant, the machinery was on the ground about the first of June and on August 1, crushing operations actually began. Mr. Theo. C. Schwier has been working double this season because Ed M. Baltes, on account of other engagements, has not been able to take an active part in the quarry operations, but his time will be free to give it his undivided attention in the coming season. From his past record and character it is safe to say he will make the plant run regularly and produce a satisfactory profit.



DETAILED VIEW IN THE BALTES STONE CO. QUARRY, SHOWING CHARACTER OF STONE.

The Baltes Stone Co. will be prepared to take care of all the requirements of the concrete contractor within a very wide radius, for the shipping arrangements are being made very satisfactory for even long hauls, and the particular excellence of their product for this industry, with the prices which they are able to quote on account of the size of their operations, are attractive in the extreme, while all the rubble and dimension stone that was taken out this year has found a ready sale. Ed. M. Baltes declares that he will increase this supply to such an extent that he will have some of these commodities to sell also.

The three gentlemen interested in this building and crushed stone quarry operation also constitute the firm of E. M. Baltes & Co., of Fort Wayne, who operate extensively as dealers in builders' supplies, being the oldest established and leading concern of that kind in the city. They are just building a new brick warehouse on Harrison Street, in Fort Wayne, and have just closed a very satisfactory season's business with a splendid outlook for 1906, but, this is another story and will be given in Rock Products next month, along with a picture of the warehouse which will be completed at that time.

Had a Fine Season.

MONON, IND., December 20.—Edward Hely writes: "Have closed down for the season. Have fine prospects for the coming year. Crushed stone seems to be more in demand each year, more especially for building good roads. I have completed twenty miles of good macadam roads this season, besides supplying considerable material for concrete work."

The Loblar Mining Co., of Petaluma, Cal., have just installed a rock crushing plant in addition to their other operations, and they will manufacture crushed stone for various uses.

Crushed Stone Plant of Big Proportions.

One of the big operations located within a few miles of LeRoy, N. Y., is the plant of the General Crushed Stone Co. This industry was established about six years ago under the name of the Duerr Contracting Co. Several years ago the title was changed to the General Crushed Stone Co., and was practically reorganized. In addition to the large plant in operation near LeRoy, the company operates several quarries in Pennsylvania located at Rock Hill, Reddington and Wilkesbarre.

One of the principal reasons for establishing the plant at LeRoy was to supply the Lehigh Valley Railroad with ballast. Since the establishment of the plant the company's business has rapidly grown and their operations have extended into many other directions. This company at present owns and operates 100 cars, some of them being of its own make, and others known as the Roger ballast car. The average capacity of the plant at the present time is 250 tons per hour, and on several occasions a record of 3,000 tons in ten hours was made.

Since the organization of the plant at LeRoy it has been practically rebuilt twice. The company quarry and crush flint and limestone, which has been said by authorities is the best in the western part of the State. A complete air compressor plant, with pneumatic drills, an incline track from the quarry to the crushers above, and other modern equipment is found at this operation. The crushed stone is marketed in six different sizes, which vary from dust to three-inch lumps, and the market extends throughout several States.

The output of the company's plant is used for concrete sidewalks and other concrete work, macadamized roads and other purposes for which crushed stone is now recognized as a potent factor. This company employs on an average 180 men during at least seven months in the year. Their business is continually increasing, with the outlook for a larger run than ever during the next season.

To Manufacture Crushed Furnace Slag.

The Ashland Iron and Manufacturing Co., Ashland, Ky., are installing a crusher for the manufacture of crushed furnace blast slag for concrete and ballast work. It is the intention of this company to erect bins for the different sizes of the slag; and will then be in a position to ship large quantities either by rail or water. This is one of the latest additions to their cement plant and will enable them to furnish material to contractors for all kinds of concrete work.

According to some authorities blast furnace slag is superior to crushed stone, gravel and other substances for concrete work. The company will gladly forward a sample of their slag to any one who may desire it.

Favors the Use of Crushed Stone.

The report from Indiana State Geologist Blatchley, who has given the matter deep consideration, is to the effect that crushed stone is a most admirable material for road building and other purposes. In many counties in Indiana there are evidences that bear out his statements in the most satisfactory way. There are in the State of Indiana vast sums of stone for such purposes, and the number of crushing plants are becoming larger every year.

According to Mr. Blatchley the number of gravel roads in the State are at the present time in excess of the crushed stone roads, but time has proven that they do not wear nearly so well and are consequently quite costly in the end.

The common Indiana limestone is not sufficient for such purposes from the fact that it is too soft, but there is considerable stone in various sections of the State which is sufficiently hard to be used for road building, concrete work of various classes, and other purposes for which crushed stone is now being so widely used.

To Enter the Crushed Stone Business.

SAN RAFAEL, CAL., December 1.—D. W. Martins, a well known business man here, has just purchased the crushed stone business of E. Schwiesau and will engage in the stone crushing business in company with Miller Bros., on a large scale. They intend to enlarge their operation and will do concrete work, foundations and walls, road building and grading. From what can be learned, it is quite probable that the new organization has a bright future before it.

Block Yard Neighbor to a Quarry.

Just alongside the Quinlan-Roy quarry at Elm Park, Staten Island, New York, is a concrete hollow block yard belonging to Caspar Mojeski. It could not possibly be better situated for a supply of raw material, only a hundred feet away being the crusher plant in the quarry, from which it comes.

Mr. Mojeski is a young man who has recently taken to the business, but he has given it a great deal of thought and attention. He believes that there is a great future for the industry, in fact, that it is the coming thing in the building line. He is very broad minded, and welcomes any one who chooses to come into the business. He thinks there is room for all, and as for the fake ones, although they may hurt it a little, but still even they do some good by helping to make it known. He is striving to make the best block he can, and one of the most interesting points about him is that he frankly admits that he does not know it all. On the contrary, he feels that there is much to be acquired, and he is ready to learn in any way or from anybody.

He uses a Hercules machine and makes a wet mortar mix. He is a great believer in a good first wetting of the mass to start the crystallization of the cement and give it a first grip. The water must not of course be overdone at this point, else the block will not become hard enough in the mould to be able to be removed, but he has the proportion just right, and with a dryer facing to prevent sticking to the mould, he lifts them out all right.

They are then put out to cure for nine days, and are kept well wetted down. This is done on a system so that the whole output may be regular and alike, and when the rain wets them also, a due allowance is made for that before they are sprinkled again. He is now getting in a Smith mixer and he hopes with that to regulate things much better as regards evenness of mix, and of course to get out a much bigger output.

He has furnished the blocks for foundation and basement of two houses in Elm Park, and is supplying the stone for another 50x50, two-story and basement. The blocks are rock faced and are 8x12x24, with a smaller size for corners. He is making all the lintels, the smaller of them being 36x4x10, and the larger ones being 60x8x12, with a center keystone. The house now nearing the second story is to be of hollow blocks throughout, from cellar to roof. The corner blocks will be tinted red, as well as a belt course just below the eaves. The entire house will probably be seamed in red, giving a quaint effect. The side and back of the house are smooth faced, relieved by belt courses of rock faced blocks. Another house of the same pattern is being laid out right next to it. The entire neighborhood is watching the work with much interest, and the hollow block is certain to become popular in this section.

A Modern Crushing Plant.

ALPENA, MICH., December 16.—The Michigan Alkali Co. write us: "Our work here is quarrying carbonate limestone, exclusively. After the stone is blasted out, we load it into four yard cars with a Model '91' Marion steam shovel. We then crush it to the size required in our crushing plant, which is equipped with three Gates gyratory rock breakers. The sizes of these crushers are No. 9, Style K, No. 8, Style D and No. 6, Style D. Our daily output is 1,500 tons. We aim to make as much flux stone as possible, and this is shipped to our people at Wyandotte, Mich., for use in their chemical works, the principal output being soda ash. The smaller stone is used for making cement by the Alpena Portland Cement Co., whose plant is only a short distance away. We run throughout the year and are fortunate in being located in a climate where we lose very little time on account of storms and bad weather conditions."

The plant of the New Jersey Lime Co., McAfee, N. Y., has had a very successful year in manufacturing lime and crushing limestone for a number of large steel plants in Pennsylvania. This company operates five kilns, four of which are burned with soft coal and the other with wood. The business has increased to a considerable extent and the company have had all the orders they have been able to take care of conveniently.

The A. and M. Barnes Lime Co., at Great Barrington, Mass., are making a number of improvements at their plant. These include the rebuilding of one of their kilns and construction of an addition to their plant.

Lime.

The National Lime Manufacturers' Association.

Meets Semi-Annually.

Chas. Warner, Wilmington, Del. President
O. F. Perry, New York City First Vice President
W. B. Hill, Kansas City, Mo. Second Vice President
A. A. Stevens, Tyrone, Pa. Third Vice President
C. W. S. Cobb, St. Louis, Mo. Treasurer
B. H. Delebaugh, Louisville, Ky. Secretary

EXECUTIVE COMMITTEE:

Peter Martin, Huntington, Ind.; O. W. Robertson, Milwaukee, Wis., and the President.

Official Organ, ROCK PRODUCTS.

Lime Meeting Program.

The program of the meeting of the National Lime Association to be held in Chicago, at the Great Northern Hotel, on January 18 and 19, has been prepared by the Executive Committee with much care, with the idea in view of interesting every one in the lime business. The meeting will be thrown open to all lime manufacturers who care to attend, believing after the conference with the members of the association that you will join with us, for this organization from an educational standpoint has been of immense benefit to all those within the ranks. Interesting papers will be read on "Publicity and Its Proper Application to Promote the Sale of Lime"; "Engineering Problems," by ex-President A. Newton, chief engineer for a number of large plants in the West, and "Business Talk on Cost Keeping," and "System in Connection With the Lime Business," by Walter Sheldon, of Hamburg, N. J., being the continuation of a paper given by Mr. Sheldon on the same subject two years ago; "Lime in Filtration Process and Its Large Possibilities of Future Developments," by C. Arthur Brown, sanitary engineer for the American Steel and Wire Co.; an address on "Hydrated Lime and Lime Tests," by Robert S. Edwards, Boston, Mass.

In this paper Mr. Edwards will discuss the different processes under which lime is hydrated and will furnish data of many actual tests which are now being carried on in his laboratory on samples of different kinds of lime. He will also present some ideas on experiments carried on with Portland cement and hydrated lime. This will be a special feature in the convention. Carlton Ellis will give us a talk on "Utilizing Quarry Spawls to Produce Quick Lime or Hydrate." S. O. Walker, of Rand-McNally Co., of Chicago, will talk on "Advertising and Methods of Canvassing." J. Gross Alexander, of Chicago, will talk on "Advertising Methods," and illustrate his talk by stereopticon views. A talk on the value of hard wall plaster produced from hydrated lime and other articles by a well posted specialist will also be presented. W. E. Carson, of Riverton, Va., will talk on "Fire Lining for Kilns." It is probable that the manufacturers of pneumatic drills will exhibit machinery at this meeting.

We trust you are making your plans to be on hand at this meeting. Who would miss it when the opportunity presents itself to be enlightened on subjects so near the heart of the manufacturer? With President Warner in the chair, who, by the way, found it necessary to go South owing to Mrs. Warner's health, you can expect some cross firing; for lime men, as a rule, can ask more questions about something in which they are interested than any lawyers we know of, especially the gentleman from Tyrone who came near being president of the United States via the Prohibition ticket, Mr. A. Stephens. You can see by the program that the meeting will be called to order at 10 a. m. on the 18th, and we will all be busy for two days and more. Mark your calendar with a blue pencil and be on hand.

Lime and Limestone of California.

California may be classed among the prominent lime producing States of the Union. Limestone is found in fifteen counties in the State in greater or lesser quantities. In fact, ledges exist in nearly all parts of California, but many of them are not conveniently located for manufacturing purposes. Perhaps the largest limestone deposits are found in Santa Cruz County, and consequently it furnishes the greatest output. Two large lime plants owned by different companies, have long been in operation in that county. The lime industry is among the largest and most profitable in the entire State.

Immense quantities of lime are used in the State, San Francisco affording the largest and most constant market. Annually very large shipments are made to many points along the Pacific Coast States, and also to the eastward, west of the Missouri river. There is a constantly increasing demand outside of the State, for California lime maintains a high standard for the excellence of its quality.

Some idea may be formed of the magnitude of the lime industry from the statistics compiled by the State Mineralogist of California. According to his figures, the total value of the output of lime and limestone for seventeen years—from 1887 to 1903, aggregates \$6,262,478.00. The value of the output for 1904, and six months of 1905, have not yet been given out, but they will show a very marked increase, and it is estimated will swell the grand total to nearly \$8,000,000.00.

The following figures taken from the State Mineralogists' recent report on lime and limestone



VIEW OF PLANT OF HOLMES LIME CO., FELTON, CAL.

during the year 1903, furnished by the different lime producing counties of California may be of interest:

Lime.		
	QUANTITY—BARRELS.	VALUES.
Alameda County	10,000	\$15,000.00
Butte	250	250.00
Contra Costa	5,300	4,500.00
El Dorado	5,600	7,000.00
Kern	101,661	76,246.00
Mono	1,818	5,000.00
Monterey	26,000	23,400.00
Placer	1,500	9,000.00
San Bernardino	39,923	28,692.00
San Luis Obispo	100	100.00
Santa Barbara	30,000	30,000.00
Santa Cruz	220,835	185,442.00
Shasta	27,000	10,800.00
Riverside	25,000	21,250.00
Toulumne	1,600	1,600.00
Totals	496,587	\$418,280.00

Limestone.		
	QUANTITIES—TONS	VALUE.
Butte County	190	\$250.00
Contra Costa	18,000	22,500.00
Monterey	6,516	9,000.00
Placer	4,000	4,000.00
Riverside	9,000	8,500.00
San Bernardino	52,813	64,613.00
Santa Barbara	20,000	40,000.00
Santa Clara	7,000	7,000.00
Santa Cruz	3,000	2,725.00
Shasta	5,400	5,400.00
Totals	125,919	\$163,988.00

Scattered through the State are many large lime producing plants. One of the most extensive manufacturing firms is the Holmes Lime Co., whose head office is located in San Francisco, and of which Mr. H. W. Postlethwaite is the president. This company was originally established in 1854. They have a very large plant in operation

down in Santa Cruz County, at Felton. There are nine kilns used constantly, and the average output is 22,000 barrels per month. A large force of men are employed. The facilities for quarrying the rock and manufacturing lime are very complete. All the barrels used are made by the company, there being a complete plant on the ground. The company owns a large tract of land in the Santa Cruz mountains, where an abundance of timber is procured. The kilns are located about seven miles from Santa Cruz city, and the output is easily shipped away to the markets.

The Holmes Lime Co. also owns and operates plants at New Castle, in Placer County, and at Colfax, in El Dorado County. Patent kilns are used at both these plants. Each plant turns out about fifteen tons of lime per day. These plants are both fully equipped with aerial and gravity tramways, and all modern labor-saving facilities. Here, as at the Santa Cruz plant, all the barrels are made by the company. The patent kilns, of course, differ materially from the pot kilns. From the former the lime is being constantly drawn from below as rapidly as it is burned—at the rate of from ten to twelve barrels at a time. The patent kilns enjoy the advantages over the pot kilns—the principal one being a greatly increased output, that, depending very much upon the character of the rock. There are differences in the grade of stone. Some rock can not be burned in a patent kiln, while others can not be reduced in pot kilns.

Another large company is the Cowell Lime and Cement Co. Henry Cowell is the president, and the head office is located in San Francisco. This company owns and operates a large manufacturing plant in the Santa Cruz Mountains, about two miles from the Holmes Co.'s plant. The average output daily and monthly is about the same as the former company's works. This company make all their own barrels, having adequate facilities for so doing. The Cowell company own another lime plant in Marble Valley, near Sacramento, Sacramento County, and a third at Concord, Contra Costa County. The output of each of these plants is from 12 to 15 tons per day, the company furnishing its own supply of barrels.

At Tehachapi, in Kern County, there is another large plant owned by the Union Lime Co., the average monthly output ranging from 15,000 to 20,000 barrels. Like the other companies, this firm furnishes its own supply of barrels.

There are a few other small lime plants scattered throughout the State, but their total output is quite as meager in comparison to the large ones mentioned above. Nearly all the Los Angeles and extreme Southern California markets are supplied by the Union Lime Co. Much of the output is also shipped down to Arizona and other Southern markets.

San Francisco, as well as all other points in the State north of Fresno, are generally supplied by the Holmes and Cowell companies. The former firm ship quantities to Nevada.

As a rule, all lime barrels are made of California redwood, that material being strong and light. The barrels are roughly and cheaply made, and



PATENT LIME KILN AND ELEVATED TRAMWAY, HOLMES LIME CO.

bound with wooden hoops. Each barrel is made to contain 240 pounds of lump lime. The average ruling price to the trade in San Francisco and other points is \$1.10 per barrel net, or, \$1.25 including the barrel.

All lime is shipped in barrels. The total quantities of lime consumed in San Francisco per month, for all purposes, is from 18,000 to 22,000 barrels. The total quantities used in that city and all the northern regions—a radius including San Luis Obispo, Bakersfield, Fresno, and adjacent districts, will reach a grand total of 350,000 barrels annually.

With scarcely an exception, all California lime is of a high grade—equal in average quality to any manufactured in the East or elsewhere. The two principal limestone rocks found in the State are the diamond, and common blue rock, mixed with a large per cent of marble. The diamond is white, with a quartz, crystallized appearance. It produces a very fine quality of lime, that is used principally for surface, finishing work, etc. The blue rock also produces a snow white lime of splendid quality, while the marble turns out a very excellent grade.

At the Felton plant, down in Santa Cruz County, owned by the Holmes Co., there is operated a hydrating plant which is the only one used on the Pacific Coast. This plant rapidly converts the lump lime from an oxide to a hydrate—a perfect scientifically slaked lime.

However, it may be truthfully stated that just at present the lime producing industry of California is thought to be rather over done, for the reason that the plastering demand has lively competition. This competition comes from other mate-



HYDRATING PLANT AT HOLMES LIME CO.'S PLANT, FELTON, CAL.

rials that are taking the place of plaster. Gypsum, and wooden walls and ceilings, are coming into favorite vogue in a great many buildings; also paper mache and other material.

While wood is used in some of the kilns, yet most of the heat is produced by crude oil. This latter is much to be preferred to wood, for a steady and intense heat can be produced and maintained. Practically, the lime producing resources of California are exhaustless—ample to meet all demands for centuries to come.

Want Reduced Railroad Rates.

A meeting was held several days ago in St. Louis, Mo., by fifteen lime manufacturers of the Southwest, for the purpose of discussing ways and means of inducing the Western railroads to cease discriminating against lime in favor of Portland cement and hard wall plaster. The matter was discussed at length, the outcome of which was the decision to appoint a committee of five to wait upon the railroad officials and endeavor to reach some satisfactory agreement.

The claim is made by the lime manufacturers that while the rate on Portland cement for a distance covering 450 miles is only 8 cents, that on lime for a distance of 200 miles is 15 cents. The lime men intend to ask that their commodity be put on a basis with cement and rated accordingly. A similar meeting was held about a year ago, but the railroads refused to take any action in the matter.

Are Seeking More Light.

The Pomona Lime, Cement and Stone Co., of Pomona, Cal., are seeking light on the subject of lime hydration. They operate a large plant at Pomona and are desirous of gaining some knowledge regarding this rapidly increasing form of lime manufacture. Like many others they have become interested in the subject and will doubtless engage in the manufacture of hydrated lime as soon as arrangements can be made.

Winner of the Prize.

Some time ago the National Lime Manufacturers' Association offered a prize for the best article on the subject of Lime versus Gypsum Plaster. There were a large number who competed for the prize which was \$100.00 in cash, and we take pleasure in announcing that this has been awarded to R. S. Edwards, B. S. We regret that our space does not permit us at the present time to give more than an outline of Mr. Edwards' valuable contribution on the subject, but we hope at an early date to do so. We must say, however, that the article is deserving of the highest praise, and Mr. Edwards has covered the matter most fully.

He goes into the matter in a detailed way and points out numerous facts full of practical information for every lime and plaster manufacturer in the country. Mr. Edwards has subdivided his article into three parts which are as follows: Part I.—Gypsum plaster and its ill effects when used in too large quantities in plaster mixtures. Part II.—The use of hydrated lime in hard wall plaster mixtures. Part III.—a. Float finish mixtures. b. Calcium and magnesium limes.

It is well worth the time of any manufacturer of the above commodities to peruse his article carefully, as we are confident that it will amply repay them for the time spent in so profitable a manner.

An Evidence of Prosperity.

The American Hydrating Co., with offices at Baltimore, Md., and Delaware, Ohio, inform us that they have recently installed four of their hydrators, which indicates with what success their improved system is meeting.

Indeed their simple automatic machine is filling a long felt want, and can be used successfully by lime manufacturers, sand-lime brick factories, prepared plaster makers, or even by dealers. They can hydrate at dull periods, thus profitably employing their labor and converting their perishable lime into a higher priced permanent hydrate. They build hydrators in several sizes to suit the varying demands, with prices accordingly.

Big Operation in New York State.

The large operation of the Empire Limestone Co., at Leroy, N. Y., is one of the largest of its kind in that section of the State. This company employs nearly 175 men throughout the entire year and since they began operations in 1903 the output has been continually increased until the present time. They have one of the finest limestone operations in the country.

The exact location of this quarry is three miles northwest of Leroy on the Lehigh Valley railroad. They supply limestone for fluxing purposes for a number of large steel manufacturing concerns in that section of the State, and as the stone in their quarry is of a coral formation known as crystal limestone, assaying 98.1 per cent carbonate of lime, is one of the purest limestones found in New York State. They own 73 acres of land, but the quarry proper comprises only nine acres. This is amply sufficient to supply the demand for many years, however, as the limestone is found in unlimited quantities.

The Lehigh Valley railroad removed the product of the plant and an average of four tons per day assist in removing the plant's output. The company has equipped their plant and quarry with their latest improved machinery, including a crusher, air compressor drills, and a miniature railway. The output of the quarry is used altogether by manufacturing plants in their furnaces for fluxing purposes, and strictly speaking this is a lime operation.

Largest Hydrated Plant in the Country.

The large hydrating lime plant of the Toledo White Lime Co., of Toledo, Ohio, has been purchased by what is known as the Kelley Island group. The plant is located at Martin, Ohio, and it is the intention of the owners to make it the largest hydrating lime operation in the country. The present capacity of this plant is ten carloads per day, but this will be increased to twenty, and the plant itself will be enlarged to at least 50 per cent in size. The present 24 kilns capacity will be doubled, which will give it the largest output of hydrated lime of any plant in existence. The operations are now well under way and will be completed within a reasonably short time.

Equipping Large Plant.

There can be no doubt about the increasing popularity of hydrated lime. Evidences of this fact are continually coming to light and the plants adopting the hydrating feature are increasing rapidly. Hydrated lime has numerous features over the ordinary lump or unhydrated lime, and not only lime manufacturers, but architects, contractors and builders are likewise gaining a more thorough knowledge on the subject, which always makes a convert to its use.

Among the largest manufacturers of hydrating machinery is the Clyde Iron Works, Duluth, Minn. They have supplied many large organizations with equipment which has always proven highly satisfactory, and we learn that they have just closed a large contract with the Ash Grove Lime Association, and are at present installing the same at their large plant. The Clyde Iron Works are more than pleased with the business done in this particular line during the present year, and are satisfied that during the next twelve months, they will have many orders for hydrating equipment.

New Lime Company Organized.

HUNTINGTON, IND., December 12.—The Eastern Lime Co. has just been organized here with a capital stock of \$30,000.00. The company has been organized for the purpose of operating lime kilns in Huntington County, and has recently purchased a tract of thirty-five acres of land which is said to contain valuable limestone deposits. Operations will be undertaken in a short time. Those interested in the new company are: A. D. Palmer, Henry Wehrenburg, William Buesching, Henry Kanning, Henry Hachmeyer, William Kruse, G. R. Kennedy, Frederick Ruse, August Hollman and William Westhoff. The officers are: President, William Westhoff; vice president, Henry Wehrenburg; secretary and general manager, William Kruse; treasurer, William Buesching.

Purchase Valuable Limestone Tract.

MARTINSBURG, W. VA., December 12.—A deal has just been made in this section whereby Newton & Scheu, of New York, have purchased a 400 acre tract of limestone from H. L. Rutherford, of this city. This tract is situated about three miles from this city and the land contains extensive and valuable limestone deposits. It is said to be the most valuable tract of limestone in this section of the State and the price paid was \$125,000.00. It is understood that operations will be undertaken in the near future.

Seeking New Capital.

MOLINE, KAN., December 11.—The Moline Lime and Concrete Co. say: "We have a fine proposition in the lime business here; if we had a little more money to push the plant. We would like to interest some one with us, and thought probably you might be able to help us to dispose of part or all of the plant. We have a fine tract of twenty acres of lime rock, which runs 96 per cent lime; have side track and everything complete, with plenty of gas. Can make lime and put it on the cars at a profit of 25 or 30 cents per barrel, and would do the right thing by the right party. We had some trouble among our stockholders, and we have had a receiver appointed. We will sell the plant soon, and will then be in position to sell the property at a figure that would interest the right party."

More Than Pleased Over Results.

NEW YORK, N. Y., November 20.—The Morgan Construction Co. say: "We wish to thank you for your accurate and comprehensive article in the current issue of Rock Products, describing our producer gas installation for burning lime at New Milford. We have had a number of inquiries in the last few days that are directly traceable to this article. You probably are aware that we are now preparing a bird's eye view of this installation. As a news item possibly you would like to publish the fact that the New York Lime Co. expect to start up their experimental gas-fired rotary lime kiln by the end of next month."

Making Some Improvements.

WOODVILLE, OHIO, December 14.—The Woodville White Lime Co., write us: "We are building an addition for storage and floor space. October was the best month in our history. Our trade in hydrate is steadily increasing."

A Lime Famine Here.

NEW ORLEANS, LA., November 28.—There is a lime famine in this city which has existed for several weeks, and the manufacturers in this section, together with the lime that is shipped here, have been unable to meet the demand which is the largest in many years. The average daily consumption of lime is three carloads, but at the present time the supply amounts to less than two carloads per day. The local manufacturers claim that the increased consumption is due to the fact that considerable lime is now being used for sugar refining purposes, and in addition to this the great activity in building lines has also combined to consume more lime than has been possible to obtain at any one time. Other uses, such as fluxing for steel, has likewise increased the consumption very largely.

The Lagarde Lime and Stone Co., of this city, claim that the reason for the famine at the present time is because the demand has outgrown the supply, and at the present there is an opening in this section of the country for a increased number of lime manufacturing organizations. Building operations have not been seriously handicapped thus far, but unless the situation is relieved before very long it is possible that some definite action will have to be taken regarding the matter.

Reorganization of Lime Concern.

FOND DU LAC, WIS., November 28.—A meeting was held recently of the stockholders of the Standard Lime and Stone Co., at which time the capital stock of the organization was increased from \$25,000.00 to \$75,000.00. The company are arranging to erect a new plant at Oakfield, and this action was taken to meet the additional expense of constructing the same. For the past several years this company has been operating a plant in Manitowoc. A number of local parties become stockholders in the organization and the old officers were re-elected, E. H. Lyons being president of the company. The company has recently purchased a stone crusher from the Austin Manufacturing Co., which will be put into operation within a short time. Other arrangements have been made so that the plant will be complete in every respect. Operations will be continued at the Manitowoc plant.

William Irvine, president of the Knickerbocker Lime Co., Philadelphia, Pa., as usual has been making some improvement in his plant. He is now investigating a gas producer and believes it will be the coming lime burner. He reports 1905 business of his company very satisfactory and unless strikes or something unforeseen interfere the new year will be even greater. He remarked that the Philadelphia Lime Association, as well as the Pennsylvania Association, had a very successful year, and will soon be called together at their annual conference and dinner.

Favor Local Associations.

TOM'S BROOK, VA., November 28.—The Rockdale Lime Co. say to us: "Business continues good, and orders are heavier than we have ever known them to be at this season of the year. We hope you will frequently call attention to the importance of local associations among lime manufacturers, by way of disseminating useful information, and also cultivating a friendly interest in each other, and to keep up an organization for maintaining prices."

RETSLAKE.

If your lump lime, or your hydrated lime "sets" too quick on the mortar board after having been "gauged," RETSLAKE will make it work COOL and SET SLOW.

RETSLAKE can be incorporated into your "white stuff" when the lump lime is run off, or it may be incorporated into hydrated lime during the hydrating process.

The cost of making your hot working lime work COOL is very slight.

The advantages of having a slow setting lime are many.

Contracts for a term of years will be made with lime manufacturers for the use of RETSLAKE.

Practical demonstrations of the efficiency of this process will be made before negotiations for its use are entered into.

Correspondence solicited.

RETSLAKE COMPANY,

P. O. Box 611,

PITTSBURG, PA.

Concrete

The Cement Users At Milwaukee.

It was first announced that the National Guards Armory could be procured, but when same was applied for by the local committee, it was found that it had been leased for two years to be used as a skating rink, and that it was absolutely impossible to secure this building. However, Mr. J. P. Sherer, chairman of the committee, says that he has secured the West Side Turner Hall as well as the Frele Gemeinde Hall, located one block from each other. The West Side Turner Hall has a large, well ventilated and nicely decorated auditorium, in which the convention's sessions will be held, and in the galleries and on other parts of the main floors, space will be allotted to exhibitors, other than those who wish to exhibit machinery. The Frele Gemeinde Hall will be devoted exclusively to the exhibition of machinery.

The headquarters of the convention will be at the Republican House.

Program.

Tuesday afternoon, January 9, 3 p. m.
Business session.

Papers by: Sanford E. Thompson, an "Concrete Aggregates"; Edwin Thatcher, subject not yet stated.

Committee report: Streets, Sidewalks and Floors.

Tuesday night 8 p. m.—

President's address.

Richard L. Humphrey, Stereopticon.

Papers by: A. L. Johnson, on "Steel for Reinforcement," stereopticon; Ross F. Tucker, on "Twenty Years of Experience in Concrete Construction."

Wednesday morning January 10, 10 a. m.—

Papers by: C. A. P. Turner, on "Cement in Building Construction," Stereopticon; Richard L. Humphrey, on "Investigation of Cement Mortars and Concretes at St. Louis," Stereopticon; R. W. Lesley, on "Relations of Cement Manufacturers to Cement Users."

Report of Committee on Art and Architecture, by Chas. E. Watson, Chairman, and possibly others.

Wednesday afternoon, 2 p. m.—

Business session; Question Box and Topics.

Wednesday evening, 8 p. m.—

Papers by: Louis H. Gibson, architect, on "Cement Block Architecture," Stereopticon; S. M. Woodward, U. S. Department of Agriculture, on "The Use of Cement and Concrete for Farm Purposes," Stereopticon; J. C. McClenahan, on "Manufactured Stone."

Report of Committee on Concrete Blocks and Cement Products.

Thursday morning January 11, 10 a. m.—

Report of Committee on Machinery for Cement Users, W. W. Benson, Chairman, with papers by: E. B. Kelley, on "Concrete Mixers"; J. P. Sherer, on "Air Tamping and Conveying Concrete Blocks"; J. F. Angell, and others.

Paper by J. L. Mothershead on "Waterproofing." Paper by E. D. Longcope on "Uses and Abuses of Cement."

Thursday afternoon, 2 p. m.—

Papers by: O. U. Miracle, on "Causes of Failures in the Concrete Block Business"; Richard K. Meade, on "The Choice of Cement for Concrete Blocks"; S. B. Newberry, on "The Manufacture of Hollow Concrete Blocks."

Thursday evening, 8 p. m.—

Milwaukee night. The association will be the guests of the Milwaukee friends at the "Builders' Club," with speeches, illustrated talks, refreshments, and all the entertainments of this large and prosperous organization.

Friday morning January 12—

Paper by E. S. Larned, on "Observations on the Testing and Use of Portland and Natural Cements."

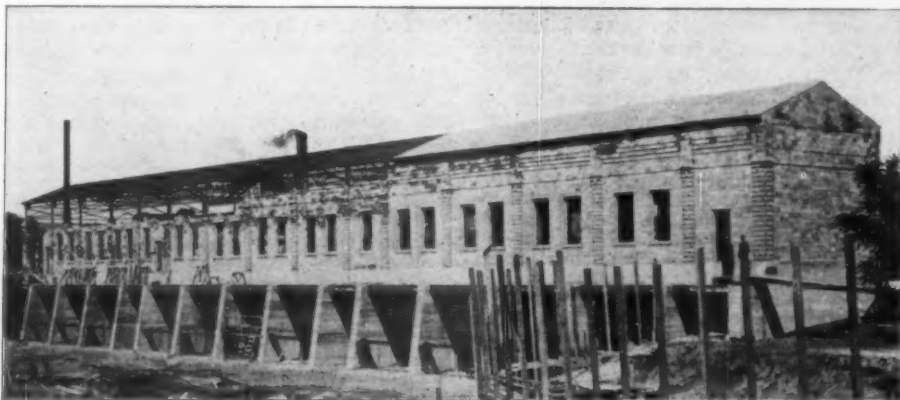
Report of Committee on Testing of Cement and Cement Products, E. D. Boyer, Chairman.

Report of Committee on Laws and Ordinances.

Friday afternoon, 2 p. m.—

Report of Committee on Fireproofing and Insurance by Vice Chairman E. T. Cairns.

Papers by: R. P. Miller, "Legislation Concerning the Use of Cement in New York City"; Will J.



ELECTRIC POWER HOUSE FOR OLIVER FLOW CO., SOUTH BEND, IND. LOWER WORK CONSTRUCTED OF REINFORCED CONCRETE, SUPERSTRUCTURE CONSTRUCTED OF IDEAL CONCRETE BLOCKS, BY C. H. DEFREES, SOUTH BEND, IND.

Scout, on "Building Regulations of Concrete Blocks."

A Concrete Burial Vault.

The Parry Artificial Stone Co., Mansfield, Ohio, manufacturers of concrete building materials and the Parry patent cement burial vault, report an active demand for their output. They make a specialty of this burial vault and say that the same is water and air tight, and is manufactured with metallic reinforcing and is so constructed that it can be lowered without any danger of chipping or crushing the sides. It is manufactured in one piece and is constructed to stand any kind of usage. We herewith give an illustration of the burial vault which gives a fair idea of its size and appearance. Mr. Parry says that it has been approved by the boards of health, and reports that he is enjoying a very large demand for the same. In addition to the burial vault he also manufactures a tablet which is used in place of a headstone at a grave. He is glad to say that these specialties are meeting with favor and the orders are continually increasing.

A Practical Concrete Man.

SOUTH BEND, IND., December 1.—One of the concrete contractors or engineers of the Middle West, who has gained no little distinction in the past two or three years by reason of the excellent work that he has completed in all lines of concrete construction is C. H. Defrees, of this city. He is quite an extensive handler of builder supplies in connection with his operation in concrete construction. He handles the well known Whitehall Portland cement as well as Wolverine and Bay Shore lime from Petoskey and the usual line of sewer pipe, fire brick, clay brick, etc. He conducts an extensive factory for the manufacture of concrete building block using the well known Ideal machinery. He has put up a great many creditable buildings with concrete blocks, among them being the Oliver power plant, at South Bend, which is illustrated in this issue of Rock Products.

He is also an extensive contractor for the construction of heavy concrete monolithic and reinforced work. Mr. Defrees is one of the men

who studies every detail of his business and gets right close down to the actual operation itself. He has accumulated a wonderful amount of information about concrete construction which he applies in a daily conduct of his business. Being located at South Bend his operations extend to a radius of twenty-five miles in every direction from his home city, and the year 1905 has been the banner year for his enterprises and the indications are that with the coming year the business of C. H. Defrees will be doubled if it is possible for him to secure sufficient competent help to operate on a number of jobs at the same time.

One factor that has had no little to do with the upbuilding of his high reputation in concrete undertakings has been that he will not intrust the management of any important work to a foreman who has not proven his entire capability for the handling of such a job. The element of reliability is stamped on every building that he has undertaken.

A Model Block Plant.

FORT WAYNE, IND., November 28.—The Menefee Artificial Stone Co., located at 2328 Thomas Street, in this city, is one of the cement block factories that has made a big success of the business by reason of the intelligent and business-like conduct of its factory.

This concern is the property of Mr. C. M. Menefee, and the active operations of the concern is under the personal direction of Mr. John Linsky, who is a young man of no little ability. He studies his business down to the minutest details and gets out the detail blocks according to the measurements of the architect's plan. This factory uses six Ideal machines and no other has ever been tried for they have given complete satisfaction. However, Mr. Linsky has constructed a number of special molds for a number of purposes that he has found to be useful and these are operated by hand. He prepares his material perfectly before he begins to make his dry-mix concrete. He uses washed and recrushed screening, bank sand and Omega cement in the proper proportions, which practice has found to fit the local conditions of this plant, namely, three of the crushed rock, one



CONCRETE RAILROAD BRIDGE AND RETAINING WALL, NEAR SOUTH BEND, IND., CONSTRUCTED BY C. H. DEFREES WHO STANDS BELOW THE ARCH.

of sand and one of cement.

Mr. Linsky has been with the Menefee concern for about two years, or soon after it began its operations. The result of his properly preparing the material is that the blocks that he manufactures are produced in uniform color so that a whole building of them more closely resembles cut stone all from one quarry, than is usually found in houses constructed of concrete blocks.

Mr. Menefee has provided a commodious factory building 60x100 feet, on the ground floor and has provided it with a full equipment of tram cars and plenty of yard room. The services of a practical carpenter are constantly employed in making the special molds that are required from time to time by the unexpected lines which are constantly appearing on the drawings of the architects.

Mr. Menefee was not at the plant at the time of our visit, but Mr. Linsky informed us that the plant had been doing a good steady business all through the season and still there were plenty of orders to keep a full force working up to the time that the weather conditions will close concrete operations for the season. This is really a model plant and one which the intending investor would do well to visit and examine before he makes the final arrangements of entering the concrete block business.

Meeting of the Concrete Association.

The Concrete Association of New York met in the rooms of the Building Trades Employers' Association, New York City, on December 8, for the purpose of adopting a constitution and by-laws. A large membership was present and the constitution and by-laws—which had previously been drafted by the committee, consisting of the officers of the association—was duly adopted.

The purpose of the association is to encourage and develop the intelligent and scientific use of cement, concrete and steel reinforcement and concrete machinery; to standardize methods of construction with a view to obtaining best results; to promote social intercourse and to secure an exchange of views upon subjects of interest; to reform abuses relating to the various industries represented by the membership of the association; to obtain and diffuse accurate and reliable information relating to all matters affecting the concrete industry, and to establish and maintain a permanent exhibition of its various productions and manufactures.

The executive committee appointed Thursday evening, December 14, to meet and appoint the various standing committees, particularly the Committee on Membership, which will proceed to put the association in thorough working order.

Two classes of membership have been provided. First, the active membership, which consists of all individuals or firms which have their capital invested directly or indirectly in the cement or concrete industry.

Second, the associate membership, which will permit of the admission of professional men, such as architects, engineers, and those who have no capital directly invested in the concrete industry, but whose work is allied with it, or who are particularly interested in the subject.

There will also be enrolled in the associate membership, firms outside of the immediate jurisdiction of the Concrete Association, it being the intention to have as large an outside membership as possible, so that those engaged in the industry in various parts of the country may make the Concrete Association of New York their headquarters and have all the privileges thereof.

The Committee on Exhibition will proceed in



REAL BROKEN ASHLAR VENERING CONSTRUCTION, BY THE FAULY SYSTEM.

due course to arrange for a permanent exhibition where there will be gathered together all of the representative products of the cement and concrete industry, machinery, reinforcing material, etc.

There will also be a library of photographs with a collection of data, where those interested may find drawings, photographs and all necessary information, so as to enable the inquirer to become thoroughly posted as to any particular state of the industry in any part of the world.

The present officers of the association are as follows: Ross F. Tucker, of Tucker & Vinton, president; H. C. Turner, of Turner Construction Co., first vice president and chairman of the Committee on Buildings and Insurance Regulations; H. C. Miller, of H. C. Miller & Co., second vice president and chairman of the Committee on Membership; W. W. Benson, of the Standard Stone Co., third vice president and chairman of the Committee on Permanent Exhibit; T. G. Barr, of the Vulcanite Portland Cement Co., secretary; Ronald Taylor, of Ronald Taylor & Co., treasurer.

Enter a New Field.

SANTA CRUZ, CAL., November 23.—The Santa Cruz Cement Block and Brick Co. say: "We have entered what we consider a new field, that of manufacturing cement sewer pipe. We can make and sell at competing prices with vitrified pipe, and as cement products are much better cured in shade and where moisture is abundant than otherwise, we are satisfied from experience, that sewer pipe made of cement is much superior to any other, as the longer it is in the ground the harder it gets (until thoroughly cured) while vitrified pipe gets softer the longer it is under ground, and especially where the glazing is either chipped or is removed through other cause. The demand for cement sewer pipe far exceeds our ability to manufacture. We are also manufacturing all kinds of cement blocks, bricks and all kinds of cement building materials."

Concrete Work Active Here.

PITTSBURG, PA., November 28.—The present building season, now doing down, shows a very large increase in building operations in concrete work used in foundations, walls and other parts of buildings. Several structures have been erected in which reinforced concrete plays a very important part and next season will show a much more vast improvement. The Standard Cast Stone Co. have been experimenting on a building material that will be cast in blocks having mouldings, etc., and they will be fully equipped next season. So far concrete blocks for building have not been very popular, but they will certainly become so as soon as the advantages become known. We have an abundance of sharp sand and the very best of gravel, both at very low prices, which ought to enable parties to make blocks and compete with any one. This has been a very successful year for the "Smith mixer," no less than 500 having been sold during the present year, of which number fifty were sold through this local office. Considerable credit ought to be given the various trade journals, as they now reach almost every man who is interested in concrete work."

A Reasonable Complaint.

NEW CASTLE, IND., December 16.—F. M. Price has written to us saying: "Regarding the amount and line of work of which I make a specialty, will say that the present year has been good, and I have been very busy all season in different lines of masonry, but a very large percentage of my work has been in the erection of business blocks and residences of cement. This is now being recognized as one of the leading building materials in this section of Indiana and other places where I have constructed buildings this season. Unfortunately, I find that this line of business is being very much abused by incompetent makers of concrete block, as well as incompetent builders who are inexperienced mechanics, and the consequence is a great detriment to the honest materials and mechanics. The same may be said with reference to side walk work which is being adopted by every person who thinks there is an opportunity to make money by putting an excess of men in that line to underbid work that can not be done for the money and make good. It is hard to get good prices for first class work, and materials are hard to get when such conditions as these exist."

A Newer Method of Construction.

DES MOINES, IOWA, December 6.—A new artificial stone block machine is to be manufactured here by Henry Schee. So far as can be learned the machine is unique from the fact that it can be attached to the side of a frame building, the concrete block being molded in it and attached so that the moulding of the blocks can be done at the side of the building. This obviates the necessity for manufacturing them on the ground and afterwards placing them in the wall. This is an entirely new feature in the concrete block manufacture and one that will doubtless prove generally popular. It is not known exactly how soon Mr. Schee will begin the manufacture of his machines, or whether he intends to organize a company, but the matter will evidently be settled within a short time.

A Southern Organization.

WEST PALM BEACH, FLA., December 5.—An organization known as the Florida Concrete Manufacturing Co., has just been organized here with a capital stock of \$10,000.00 for the manufacture of concrete blocks and other specialties. The company expected to begin operations about Jan-



PARRY'S CONCRETE MEMORIAL TABLET.

uary 1, as the building at the present time is under construction. W. I. Metcalf is president, E. Kuschel, vice president and general manager, and T. J. Campbell, secretary and treasurer.

Has Had an Active Year.

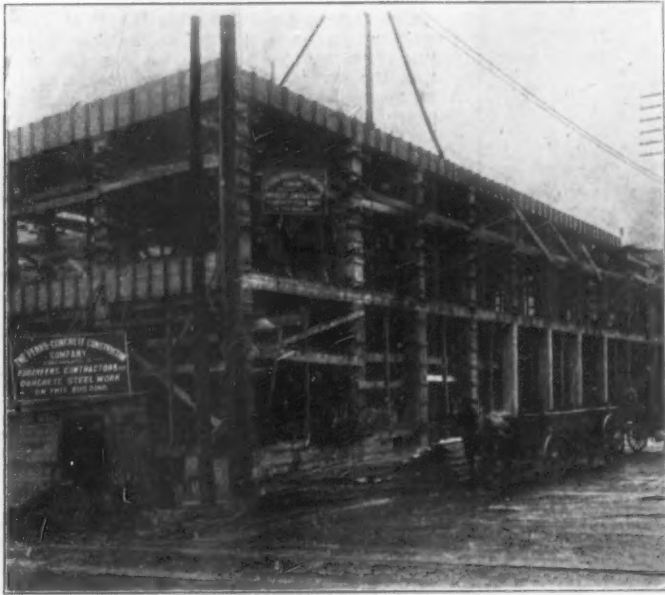
JACKSONVILLE, ILL., December 13.—Otis Hoffman writes us: "In the past season I have put up thirty concrete block foundations for residences, besides I have shipped about five thousand blocks out of town and I have laid five miles of concrete walks, and all indications point to another year for a good concrete year, both in the block and in the walk at this writing."

Two Nice Block Jobs.

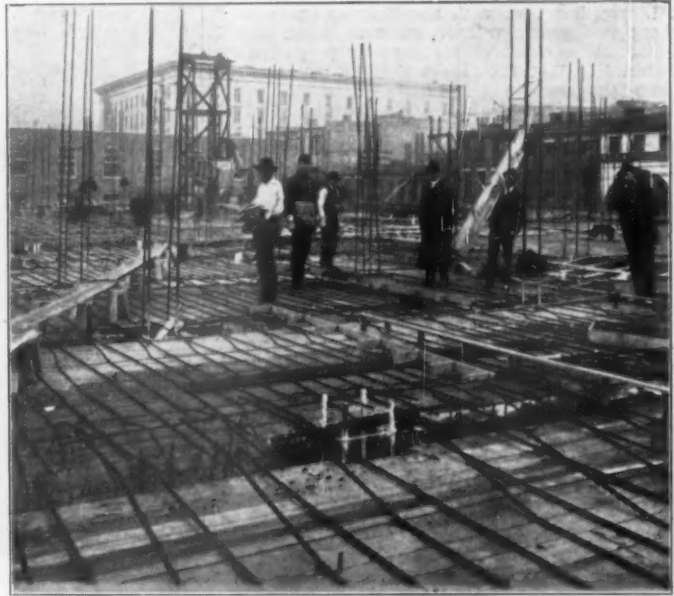
The H. S. Palmer Construction Co., of Washington, D. C., has just completed a fine retaining wall of its hollow blocks for the residence and memorial hall of Mrs. John A. Logan, of Washington, D. C.; also for Gen. Forwood, of Washington, D. C., a wall of hollow blocks.



RESIDENCE W. M. SCOTT, COLUMBUS, OHIO, BUILT ENTIRELY OF HAYDEN SYSTEM BLOCKS.



BELKNAP BUILDING, LOUISVILLE, CENTERING IN THE EARLY PART OF THE WORK ABOUT OCTOBER 1.



BELKNAP BUILDING, LOUISVILLE, LAYING THE REINFORCEMENT FOR FLOOR ARCH CONSTRUCTION.

FINISHING A GREAT CONCRETE STRUCTURE AT LOUISVILLE.

(Continued from Page 3.)

fine record was made during this part of the work. In addition to the building proper stairways have been erected of reinforced concrete as well as the retaining walls and vault. The footings on the north wall are of cantilever construction. The partitions are constructed of metal lath, plastered with Portland cement mortar.

The aerial way at the front entrance will be constructed with prism lights which will be finished with reinforced concrete. The last roof column was set on December 14, at 10 a. m., and the last bucket of concrete was poured on December 20, at 1 p. m. The favorable weather conditions seem to have been made to order during the construction of this job for freezing point has

not been reached for more than a few hours at any time. The contractors expect to have the building completed about March 1, 1906.

Outside of the reinforced concrete structure proper just now complete, there are yet to be put up the 13-inch curtain walls of red veneering brick, with bases, water tables, belt courses, sills, etc., of Indiana oolitic stone. The construction company are now erecting a smoke stack which will be 128 feet in height, 5 feet in diameter and with 6-inch walls, which will be completed in a short time.

This building stands as a striking monument of the new awakening of the South, and speaks well for the business enterprise of the Belknap company, who have set the initiative for structures along similar lines, and doubtless within a reasonable period others of no less magnitude will soon follow in Louisville, and other progressive Southern cities as well.

A Unique Block Industry.

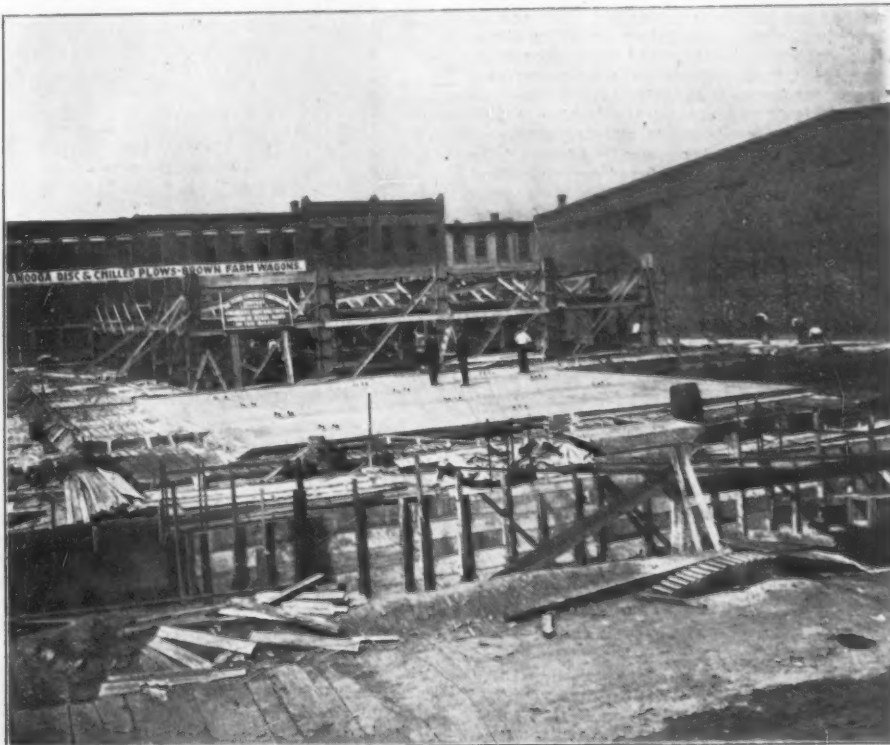
BILOXI, MISS., December 1.—One of the enterprising industries in this locality is the manufacture of artificial stone, roofing tile, concrete foundations, etc., from crushed oyster shells, sand and cement. Up to within several years the canning companies in this city were considerably puzzled as to how to dispose of the immense amount of oyster shells, which accumulated more rapidly than could be disposed of. Some time ago, one of the plants began its experiments with a shell crusher, and the outcome has been that there is at the present time a large artificial stone plant here which is meeting with remarkable success. Formerly these shells were sold from one to two cents per barrel, and the demand at this low figure was very small. This new industry is due principally to the work of Mr. I. Heidenheim, who has worked energetically to accomplish the remarkable results obtained. In addition to the manufacture of concrete specialties, there is also manufactured a lime from these shells which is said to be equal in every respect to rock lime, with the exception that it is lighter in weight.

To Erect Concrete Bridge.

A contract has recently been let by the Kentucky and Tennessee railroad for the construction of a 516 ft. concrete bridge which will cross the Big South Fork of the Cumberland river, at the mouth of Rock Creek, Wayne County, Ky. The contract was awarded to the Collier Bridge Co., of Cincinnati, Ohio. This will be the largest concrete bridge in the South. Work will begin on the structure in a short time, and when completed it will open up valuable lands containing coal and timber land.

The United States Concrete Machinery Co., of Concord, Mass., has been organized to deal in concrete, etc. It has been organized with a capital stock of \$10,000.00. The officers are: President, W. H. Larkin, Jr., Summerville, Mass.; treasurer and clerk, Leonard Goodwin, of Concord, Mass.

The Cumberland Reinforced Concrete Co., of 419 Market Street, Camden, N. J., has been organized and will engage in concrete work with a capital stock of \$400,000.00. John MacPeak, G. H. B. Martin and F. R. Hansell are the incorporators.



VIEW OF THE CONSTRUCTION OF THE BELKNAP BUILDING, TAKEN ABOUT AUG. 25, COMPLETING FIRST FLOOR.



CONCRETE BRIDGE OVER GRAND RIVER, GRAND RAPIDS, MICH., BY L. W. ANDERSON, CITY ENGINEER.

PROGRESS OF THE INDUSTRY

In Which We Invite the Opinions of Our Friends
in the Concrete Machinery Business to
Write Upon the Subject of
Development.

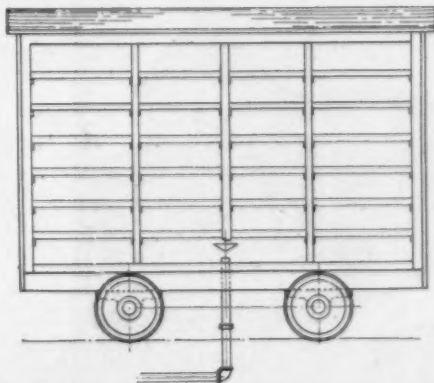
BIRD'S-EYE VIEW OF THE CONCRETE BLOCK BUSINESS

The concrete block industry as a business is only about four years old, but from one end of the country to the other it is known and considered to-day as a coming building material by many of the dealers in building supplies, by many architects and the building contractor generally. There are also many cases where these persons, who are best qualified to have knowledge of such matters, have dropped the word "coming" and now consider it as being a well established and accepted building material of the first rank.

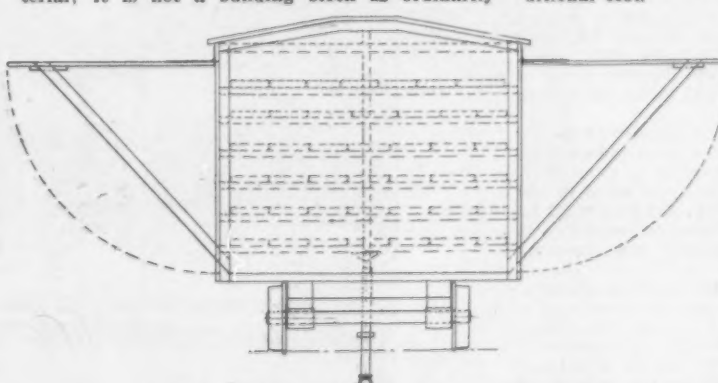
At the beginning of the industry the dry-mix, consisting of cement with a given proportion of inert material, and requiring an after treatment or seasoning process in order to complete the setting of the cement, was little understood; and not at all backed up by men of science. Indeed the first investigations were not altogether satisfactory.

The first step was the securing of the molded body by means of hand tamping so that it would stand together and take the shape of any mold into which it was rammed. The seasoning was an after consideration which had to be learned by experimentation. For a long time there was a great diversity of opinion as to the proportions of materials that should make up the concrete mass. A much greater amount of crushed rock was put in the early mixture than is now used, and it was used in a much coarser state than is employed in concrete block manufacture as at present understood.

The using of a larger proportion of cement in the special face mixture has been the subject of much controversy and dispute, but in all the range of the industry the most important advance is the final settlement of the seasoning proposition, which has at least reached such a solution that there is no further doubt that a good uniform artificial stone of sufficient waterproof qualifications for all practical buildings purposes can be produced with a certainty as to cost, which assures a profitable outcome of a venture in the concrete building block business, with proper machinery, good equipment and good materials.



PAULY'S WET-STONE CAR FOR SEASONING CONCRETE STONE, CLOSED.



PAULY'S WET-STEAM CAR FOR SEASONING CONCRETE STONE, OPEN POSITION.

Mr. Pauly Works Out Results with New Ideas.

Mr. A. A. Pauly, of Youngstown, Ohio, was one of the last to enter the field as an inventor of concrete machinery. He had carefully observed all the workings of the machines of his predecessors, and profited in no little measure by their developments. The first thing he offered was the Pauly concrete wall machine, a very simple and yet very effective device for the erection of monolithic concrete structures and retaining walls of every description, under all conditions, without the use of expensive false work, and it has been used with equal success for reinforced wall construction.

The great saving on concrete operations by the use of this really wonderful machine immediately made it popular, and many thousand yards of concrete cellar and retaining walls, as well as warehouses and workshops have been successfully and economically constructed with this machine.

In the city of Youngstown a company confining its operations exclusively to such work as comes within the range of the Pauly wall machine has done a very profitable business last year, and the original investment represented was merely the price of the machine, which is small, and the practical instruction of using them. Toward the close of the season, this company had in constant use twenty of the Pauly wall machines, with more business than they could possibly keep up with. Of the large number of jobs they have put up there is not a dissatisfied customer, and the people who are living in the houses built with these basements unhesitatingly praise them on all occasions.

The reports that come from the users of the machine wherever it has been shipped contain only words of praise for the product of its operations when intelligently used. This machine represents the perfecting of a brand new idea in concrete, as it uses a semi-wet mix and not the dry-mix so well known in the manufacture of concrete blocks.

During the present year Mr. Pauly has devoted his energies to the perfecting of his hollow veneering block press. This machine was really completed early in the summer, and in his own factory Mr. Pauly has been operating it every day improving the minutia of the various parts and appliances. This machine turns out new material; it is not a building block as ordinarily

understood, but a veneering block of concrete, about 1 to 1½ inches thick, having a laying-up or bearing surface 4 inches wide.

The bed of the press is arranged in such a way that veneering blocks can be made all of one size up to 12 x 24 x 4, or any fraction of that size on the face, every block containing the four-inch bearing dimension.

The Pauly veneering block press has solved the much desired difficulty of producing in concrete real broken ashlar construction by the use of interchangeable sizes of blocks. The bed has been arranged so that in one pressing the following assortment of blocks can be produced: One 12 x 24 x 4 in.; one 16 x 12 x 4 in.; one 8 x 24 x 4 in.; two 8 x 12 x 4 in.; one 4 x 12 x 4 in.; two 6 x 8 x 4 in.; two 4 x 6 x 4 in.; and three 8 x 4 x 4 in. Any other size in length and height can be produced by merely changing the pallets and partitions on the bed of the press, without interfering with any other part of the operation, and it is impossible to manufacture blocks without allowing the regular ¾ in. space for the mortar joint.

In Mr. Pauly's system two-piece curtain walls can be constructed by using wall-ties of galvanized iron to connect an interior and exterior wall, thus producing an actual hollow wall without any possibility of moisture coming through.

In perfecting this machine, and collateral with it, Mr. Pauly has developed the idea of seasoning or hardening the molded blocks in a tight chamber



WORKSHOP OF MONOLITHIC CONSTRUCTION, BUILT WITH PAULY'S WALL MACHINE.

in the presence of wet steam. In his own plant he employs a room of concrete construction capable of holding from 25,000 to 30,000 surface feet of veneering block at one time, but the very latest proposition that he has invented is his wet steam seasoning car, designed to hold about one hour's product of the molding press. When filled this car is closed tightly and moved away on a tram railroad stopping in front of a plug in a steam main laid alongside of the track, to which the car is coupled and the steam admitted from the boiler. This innovation at once elevates the plane of manufacturing concrete building material to that of a continuous factory proposition.

Of course this system can be applied with slight changes to every kind of concrete stone that is manufactured to-day, and represents the latest radical change in the way of development that the country affords.

As another result of Mr. Pauly's experiments he has made an improvement in the method of handling the concrete mixture, which produces finer results than anything heretofore used without additional cost.

Mr. Pauly states that these observations do not come from mere speculation, but that they are noted for the actual results in his own experimental plant which has been devoted to the development of his own machinery, and that he has found a ready sale for all the material that he has been able to produce, because of its popular acceptance with the brick masons who understand the use of the material better than any other kind of artificial stone yet offered to them. They have already learned their trade in laying light pieces of material upon a four-inch bearing surface.

The enormous flood of orders for material that has come to his plant without solicitation is one of his reasons for offering this machinery, together with instructions with regard to the system he has developed for sale, as it has proven to be a profitable proposition where sand and gravel are to be had at a reasonable figure. He has reduced the amount of material consumed in the manufacture of hollow blocks very near the minimum to obtain desirable building material, and less material naturally means a lower cost.

Words from the Original Inventor of Concrete Block.

H. S. Palmer, president of the H. S. Palmer Concrete Building Block Co., says: "Within the last two years no less than sixteen foreign countries have acknowledged the merits of hollow concrete building blocks as a builders' material by purchasing machines, and millions of dollars are invested in the industry which is rapidly enlarging."

"It is impossible in this article to give a complete history of the various stages and development of building construction, which would begin with the ancient cave dwellers and proceed with the different material and forms of dwellings, which, from time to time, has taken shape in the building of mud huts, wood sheds, stone, etc., until more modern times constructed brick of mud and straw, and later of burned clay."

"The cement of ancient times which now stands after a lapse of thousands of years, is proof of its great superiority of endurance, and the ease of manipulation will commend it to the general public of the future."



THE PRIVATE OFFICE OF THE HARMON S. PALMER B. B. CO., WASHINGTON, D. C.

Realizing these facts Mr. Palmer 16 years ago began the task of making practical and simplifying its use, and by making a hollow block, reduced its cost and made a better wall. Simple machines were constructed to make the blocks and common labor could make them; unskilled labor could lay them in the wall, but while this is not the best way it opened a field for the handy man to accomplish that which otherwise he could not do.

It might be very interesting to read the peculiar changes which have taken place rapidly in the short life of the company, as the mind of the public has followed the development of the industry, and like all other pioneers of merit they have had their share of trouble with infringers and imitators. They have been handicapped by the persistent novice in his haste to build with these blocks and his eagerness to dispense information about that of which he has no experience or knowledge, which has brought confusion in many minds to the detriment of the industry; but occasional depressions have always been followed by better business and brighter prospects as the public grasped the true situation and learned more of what constituted the merits and means of success in the industry.

In 1902 the company was organized with an authorized capital of two million dollars and no change have since been made except as to some of its directors. Its business has expanded until it now reaches to nearly every country, and in several instances the United States government has acknowledged their value by purchasing and operating these machines.

It is the aim of the company to keep ahead of any improvement in blocks and machines, and to this end they are ever on the alert, and lately have put on the market a new self-closing-adjustable-automatic machine which seems to be the ideal, and all that could be desired for the purpose of making perfect building material in the shape of hollow blocks of concrete.

The company is located at Washington, D. C., in a large building constructed of their own material, and an interior view of their offices are shown in the illustration herewith.

In connection with manufacturing and producing these blocks and machines they are engaged in forming construction for the purpose of improving vacant lots with these buildings, which can be rented to the people at a fair percentage on the investment, not over 9 per cent.

There is no diminution in the demand for machinery to equip plants for making hollow concrete building blocks, and the H. S. Palmer system continues to be prominent in the concrete block industry. On a recent trip, H. S. Palmer, of the Harmon S. Palmer Hollow Concrete Building Block Co., of Washington, D. C., sold exclusive rights to his system in Lackawanna County, Pa., and three machines, one of the purchasers being A. T. Troutwine, of the Carbondale (Pa.) Machine Works. He also sold rights to Camden County, N. J., and two machines to George A. Aldrich, of Philadelphia. These sales indicate that the H. S. Palmer system is continuing to be recommended to those who think of entering into the new industry and who investigate the Palmer patents.

Enterprise and Activity of the "Ideal."

The Ideal Concrete Machinery Co., South Bend, Ind., have been operating as a corporation for only a little over a year. They first began the manufacture of the Ideal concrete building block machine as invented and patented by Mr. Frank A. Borst, who became the president of the corporation, after operating about four years as a private enterprise.

Mr. Sherman L. Kelly, who was formerly connected with the Wabash Portland Cement Co. as salesman, is vice president and general manager, and Mr. W. Wetzstein is the secretary.

Their Ideal building block machine has been a success from its first introduction to the trade on account of the ease with which a common laborer can turn out good building material, although they do not recommend the placing of concrete machinery in the hands of unpractical people. This concern is rapidly branching out in the manufacture of concrete mixers and machinery especially designed for producing sills and lintels and various products suggested by the builder in the rapidly developing industry.

Their machinery has become an important factor in the building trades, and they have met the requirements of the builder in every respect. The company is capitalized at \$100,000.00, and occupy a large three-story building containing a total floor space of 16,600 square feet three stories beside the basement, which is used for the storage of unfinished castings, pallets and other furnishings for the machines which they manufacture. The first floor is used for the offices and for the shipping and testing department, for every Ideal machine that goes to the customer is thoroughly tested before it is crated for shipment. The entire second floor is devoted to the machine shop, and is equipped with power planers, lathes, drills, shapers and etc., and several special machines have been constructed to facilitate the manufacture of certain portions of the machines produced, materially adding to the speed of production. On the third floor



RESIDENCE AT CASSOPOLIS, MICH., CONSTRUCTED WITH "IDEAL" BLOCKS.

is located the pattern shop and space for the storage of stock machines.

The business of this company is rapidly increasing and not only are Ideal machines being shipped to all parts of the United States, Cuba, Canada, Mexico, England and the Philippine Islands, but in every instance there is only one testimony returned and that is the entire satisfaction of the purchaser.

In the Ideal hollow concrete block machine this company is offering the manufacturer, the contractor and builder a machine which has proven itself a very profitable proposition from every point of view, for no matter what shaped blocks are to be produced they can be accomplished with facility.

The big factory at South Bend has a force of expert pattern makers and machinists who are continually producing new face plates of various designs, which indicates a constant increase of usefulness in their machinery.

This company has already produced a machine for making belt course blocks, chimney blocks, veneering blocks, copings, porch piers, octagons in any degree and circles of every radius useful to the architect or engineer. They are just announcing the latest machine which is to be known as "the Ideal Special," representing the newest invention of Mr. Borst. This machine will produce very large sizes of artificial stone, such as sills, lintels, steps, water tables and the like. It is adjustable of an extreme length of 60 inches, a width of 18 inches and height of 9 inches for a single stone.

No better proof of the high opinion in which the product of the Ideal machines is held in its own home town is necessary than to note the large number of buildings that have been constructed with Ideal building blocks.

Mr. C. H. Defrees, of South Bend, who is one of the most successful contractors operating in concrete construction, uses a number of Ideal machines. In fact, he uses the Ideal machine exclusively in his successful operations which are mentioned elsewhere in this paper.

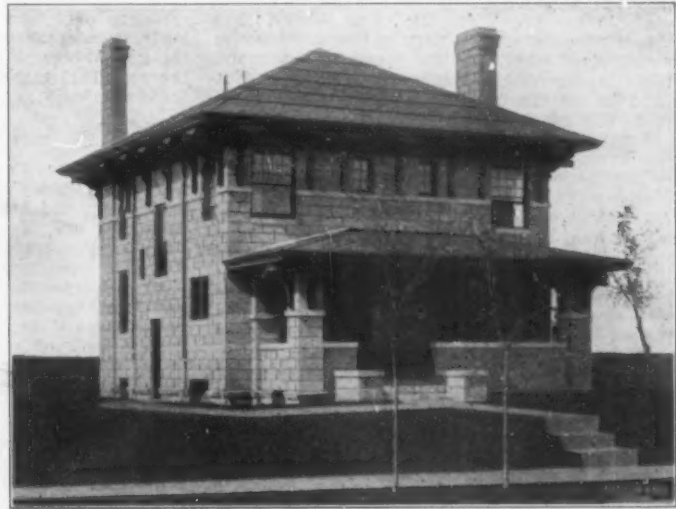
Mr. Wetzstein remarks that less than one year ago to receive an inquiry for concrete block machines from an architect was a rarity, while there is not a day at the present time that does not



THESE HOUSES BUILT BY M. C. WATERS, CONTRACTOR, JACKSON, MICH., WITH COLTRIN MANUFACTURING CO.'S BLOCK MACHINES, APPROXIMATE COST OF EACH \$500.00.



CARNEGIE LIBRARY, AT SYRACUSE UNIVERSITY IN COURSE OF ERECTION, SHOWING CONSTRUCTION UNDER TWO-PIECE SYSTEM OF THE AMERICAN HYDRAULIC STONE CO.



EIGHT-ROOM MODERN HOUSE, DENVER, COL., CONSTRUCTED UNDER TWO-PIECE SYSTEM, THE AMERICAN HYDRAULIC STONE CO.

bring them by the score. In one of the circulars recently issued by the company they exhibited a number of wagons delivering Ideal machinery to the railroad for shipment. This scene is one that is repeated every day, for the buyers of Ideal machinery very soon purchased duplicates to increase the capacity of their operations.

Mr. Borst says that he has about gotten his mixer proposition complete, but that he has no intention of offering it to the trade until it is truly "Ideal" in its perfection, but of that we will have something to say in a future issue.

In the progress of the year 1905 the Ideal Concrete Machinery Co. have held their position in the front rank as originators of new things for the concrete manufacturer and contractor. Mr. Borst recognizes that the business has still a great future before it, and he still has in his mind future developments that will be presented in due time.

The American Hydraulic Stone Co.'s Observations.

The growth in the use of concrete blocks in dwellings and smaller buildings could by no means have been prevented as the readiness with which they are adapted to any size, shape or form for decorative purposes, the advantages of insulation which they afford, their fireproof qualities and their relatively low cost commend them likewise to contractors and owners. It is, however, of the increase in their use in large and important structures that we wish especially to speak. This development has come as a direct result of the able engineering skill brought to bear upon improvements in processes and machines, which has convinced blockmakers that certain scientific principles must be employed to attain the best results—the most important of these principles being as follows:

First—The admixture in proper proportions of a coarse aggregate tending to secure greater density and marked increase of strength.

Second—The use of an amount of water sufficient to cause thorough crystallization, thus securing the full strength of the cement used.

Third—That through manipulation in mixing which coats every particle of the aggregate with the bonding cement.

Fourth—The application of uniform and instantaneous pressure resulting in homogeneity and thorough condensation of the mass which causes the blocks to withstand an enormous crushing strain.

Fifth—Scientific methods of facing by which no distinct line of cleavage remains between the face and the body of the block, and no separation or disintegration ensues.

Sixth—Such shape of blocks and such an arrangement in laying that there will exist in the wall the same principle of bonding as in the header and stretcher bond of brick work, thus affording walls which will withstand enormous lateral stress.

Seventh—A decrease in heat conductivity, and an increase in water resistance by constructing the wall so that a continuous horizontal air space obtains throughout the whole.

The practical application of the principles above recited is more thoroughly exemplified in the two-piece system of the American Hydraulic Stone Co. than in any other concrete block construction which the public has been invited to adopt. The fact that this system has met with the approval of the best architects and engineers can not be more readily proven than by calling attention to its use in a few of the prominent buildings in which it has been adopted. The Nebraska State Normal School is now completed and occupied for its intended purpose; all of the blocks for the immense power house of the Chicago Drainage Canal have been made in accordance with this system; and it is also used in the Carnegie Library in connection with the Syracuse (N. Y.) University.

Busy as a Hive of Bees.

P. B. Miles Manufacturing Co., Jackson, Mich., report such great improvement in the demand for their popular machines that they are behind with their orders, and it will be necessary for them to go to large expense to reorganize their factory so as to take care of a greater volume of business. Their plant has been run at top notch capacity for the past year, and the many reorders coming from parties who have already purchased one machine indicates that it has given satisfaction. The Miles machine is very flexible in its operations, that is to say, it will take care of all the peculiarities that are met with in actual construction. Every detail of chimney block, curve and hexagon is provided for, as well as belt courses, veneering and foundation stone of every character. Indeed this concern is practically swamped with orders and is now bending every energy to catch up with the business now on hand before taking any more on.



LEVI P. NORMANDIN'S LATEST INVENTION, THE FAVORITE SAND-CEMENT BRICK MACHINE.

Testimony of the Cement Machinery Co., Jackson, Mich.

We operate the most modern block machine manufacturing plant in the world, and have associated with us a most competent and efficient corps of mechanical and cement engineers. Each and every department of our business is under the direct supervision of experts in their respective lines. Until recently we have manufactured the high-grade Normandin machine exclusively. However, ideas pertaining to building block machinery vary, and it is generally conceded that no one type of machine can successfully conform to all existing conditions and fulfill every requirement.

To successfully meet the varied requirements our engineers have developed and perfected a complete line of building block machinery, and we are now manufacturing four separate and distinct types of machines, each and every one of emphatic superiority and the leading type of its class. We are in the best possible position to supply the wants and fulfill every requirement in the cement machinery line of architect, engineer, contractor or manufacturer.

Our 1905 Model, Style "C" 32 in. "Normandin" face-side is our leading type of machine. It is a scientifically and geometrically constructed machine, built upon correct mechanical principles, and its construction and operation are perfect in every detail. This machine needs no introduction to building block manufacturers, as it already has an established reputation acquired upon its own individual merits. Wherever exhibited it has received the highest awards for superior excellence, and has twice been adopted by the United States government engineers in preference to all others in competition.

Our "Peninsular" face-down machine is unquestionably the latest improved, most practical and complete machine of its type. Like the "Normandin," its strongest features are its rapidity of operation and adjustability.

Our "Cemaco" face-down machine is a very practical machine in every respect. Its strongest features are its simplicity, durability and rapidity. It is a hand-pulled core machine. Wooden bottom pallets are used exclusively.

Our "Champion" veneer block machine is a tamp and pressure machine combined. It is especially adapted to manufacturing water-tables, cornice, moulding and coping. It produces nothing but solid blocks which can, however, be successfully used in either hollow or solid wall construction. This machine combines simplicity, durability and rapidity.

The latest mechanical achievement of Mr. Levi P. Normandin is the "Favorite" sand-cement brick ma-

chine which is absolutely new, modern and up-to-date in every way possible. The Favorite has advantages over every thing of the kind in the way of simplicity, rapidity, durability, economy, quality, appearance and accuracy of product. Not only this but the machine is very reasonable in price. The purchaser of this machine will find it a permanent and profitable investment. It is a sure money maker because it costs nothing but common labor to run it and sand and cement are the only materials required.

The machine has been produced in several sizes, ranging from ten to twenty bricks to the impression according to the requirements of the customer. It makes an extremely dense and perfect brick every time with sharp edges and corners, and the practical tests that have been developed at the factory prove that it is easy to secure a speed of twenty perfect brick every forty seconds, which, for a run of ten hours means 18,000. This result can easily be accomplished with sufficient help in connection with a first class mixer proposition.

The crowded condition of our columns at this time forbids us going further in detail, but we will have more to say about the Favorite in the future.

Mr. Smith Continually Studying the Needs.

The Automatic Building Block Machine Co., Jackson, Mich., have developed a very fine proposition in the way of concrete building block machine. This machine was first completed just about one year ago, and was on exhibition at the Indianapolis Cement Users' Convention. Since that time slight improvements have been added to the machine in order to bring it up to a high state of perfection.

Mr. W. T. Smith, general manager of the company says: "I have noticed a general improvement in the concrete building block idea during the past year, and am constantly studying the business so as to meet the requirements of the building trade with the best machine that is possible to produce."

Mr. Smith is an earnest worker in the interests of the concrete industry, and one of those who feel that it is of no special advantage to place machinery in the hands of parties who are not in a position to make a success of the business or a profit on the machinery which they may be induced to buy.

The latest advancement that this concern has to offer at the present time is a low-priced hand-tamp brick machine, molding three brick at a time and so simple in all of its parts that a mere child could learn to operate it successfully—at the same time, with the use of a proper mixture, it will turn out standard building material. This is a very attractive proposition and can easily be afforded by any capable man who wants to be his own master and go in business for himself, for with this little machine and provided with practical ideas and the necessary material it would be very easy for one man to make a good living for himself and family in his own back yard without having to pay rent.

This machine opens the door of opportunity to many a determined fellow who is not ashamed to start with a small business and work his way up by his own efforts, and in noting the progress of the year, it is not out of place to consider this useful little machine.

The New Boos Brick Machine.

The Coltrin Manufacturing Co., Jackson, Mich., manufacture a cement block machine which has an extremely wide range of adaptability to the necessities of the building trade, and has been in successful operation for several years, having proven itself profitable in the hands of many successful users in all parts of the country. Of this concern Mr. A. G. Boos is the president and manager, and Mr. C. C. Helling is the secretary and treasurer. Their Coltrin machine makes a hollow block having one large opening, and not with two spaces as presented by so many machines. As it has been on the market for several years, the machine has been perfected in all of its details, and during the year of 1905 the model has been improved so that it represents as near perfection as is possible to be obtained in the original idea. This machine contains nothing except actual working parts, and can be placed on a table or on the ground, so that in hand tamping the man using the tamp can stand directly over the mold and work for a much longer time without becoming tired than where the block is molded higher from the ground.

The latest thing that the Coltrin Manufacturing Co. has developed is the Boos cement brick machine which has just been perfected, and is now ready to be offered to the trade. This machine is constructed entirely in their own shop, is a

hand tamp affair, and represents at low cost the complete outfit for a single man going into a business independently by his own efforts. Among the new things to be mentioned as a product of the year 1905 this can not be overlooked.

The "Eureka" Mixing Machine.

The Eureka Machine Co., Jackson, Mich., is the name of the reorganization of the Brady Cement Machine Co., which has just been effected. The new concern takes over the business of its predecessor and has a capital stock of \$30,000.00, fully paid up. Mr. H. F. Abbott, who is so well known to the trade, is the presiding genius. Beside the manufacture of the well known Brady block machinery, which will be continued by the new firm, they have ready to offer something new in the shape of the "Eureka" concrete mixer, which is the result of a great deal of experimentation to perfect it in such a manner so that it will handle all classes of material for mixing, measuring and graduating them with accuracy. The "Eureka" will be on exhibition at the coming convention of the cement users. Its builders have demonstrated that the machine will automatically measure the material from 1 and 1 to 1 1/4. It measures crushed stone and gravel that will pass through a 2-inch ring. It is light to move around from one job to another and provided with wheels to make the moving operation as easy as possible. It represents a small investment as compared with the price of other machines and produces the largest capacity with the smallest amount of labor. It is practicable and profitable for use in either large or small jobs. It produces a thoroughly mixed product continuously, and can also be used as a batch mixer. It is entirely constructed of iron castings and steel, perfectly adjusted and tested before being shipped to the customer. This machine is illustrated in the advertising department of this paper, and those attending the convention should not fail to investigate its merits.



ORNAMENTAL COLUMN OF CONCRETE BLOCKS, BUILT AT JACKSON, MICH., SHOWING SAMPLE FACE PLATES.

Fisher Hydraulic Stone and Machinery Co., of Baltimore, Md.

Being unable to exhibit our machinery at the coming convention, owing to the vast amount of powerful machinery used, Mr. Leonard, the secretary-treasurer, will attend the convention with descriptive literature. Our outfit consists of a 200 ton hydraulic press, a 4-plunger hydraulic pump, heavy steel mold boxes, mounted on trucks, tracks to convey them to and from the curing bed. The press would have to be lowered in the ground on a foundation to place it in position to operate. The pump would have to be set and operated by a belt from either an engine or electric motor. A track of at least 40 feet would have to be laid to allow the mold box to travel on. Then consider the weight of 25,000 pounds. This is more than we care to undertake for a three-day exhibit. I fully believe that it would be a great adjunct to the con-

vention by its rapid construction of blocks, its pounding and compressing blocks of all sizes and shapes desired by the operator, under a pounding glow of 200 tons. 250 of these strokes are applied over the entire surface in less than 30 seconds, completing eight blocks, and each block equal to twenty common-size bricks in wall construction. This gives the product a commercial value and superior quality. Every block is uniform and solid when automatically delivered by the steel mold box. It would also be interesting to those inspecting the press to see a machine make blocks at the rapidity of 4,000 in a day of ten hours, also quickly adjustable to make blocks from the size of a common brick up to a block weighing over 900 pounds. Owing to the pressure applied, these blocks have been put in the wall 24 hours after being made.

It is no longer visionary that the cement or concrete blocks must be made by machinery, but a fact proven and demonstrated by many companies already using this system.

Now, referring to the local company in this city using the Fisher machinery system, their plant situated on Wilkins Avenue commenced operations May 1, 1905, and blocks manufactured by our machinery and by this company are used in many handsome buildings, and their value are many hundreds of thousands of dollars.

We quote as follows from a letter written to the manufacturers of the blocks by the Fort Avenue Savings Bank: "We observed the work while under construction and appreciate the fine quality of the stone, the superiority of the air chamber, damp-proof wall and the fire-resisting feature, while the appearance is certainly an improvement over pressed brick, which were first specified in the plans."

The machinery operated by this company was one of the first perfected machines furnished by the Fisher Hydraulic Stone and Machinery Co., and following this with high recommendations are all of those using perfected machinery sold only by our company. The phenomenal success of the plant lies entirely in the superior quality of material that appealed to the architects and builders of this city after they tested and became satisfied of its commercial value.

Noyes F. Palmer, Brooklyn, N. Y.

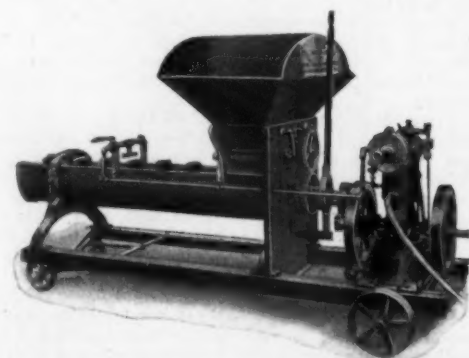
It was to be expected that the South would be the better field for concrete operations because of climatic conditions, which would cause no stoppage of work. The action of frost on green concrete is the one hindrance to the business in the North. Still the care of the green products in the South is not to be overlooked, and it requires plenty of water there and less sunlight to prevent cracking.

This industry was an early venture of a patent sales agent without capital to develop patents, machines or methods, and the desire to make money quickly led to various business deals and transactions common to the experience of all inventors and pioneers in all growing industries.

The first stage of the block industry has been obliged to struggle with all the drawbacks common to patent disputes and stock jobbing schemes.

The second period has now arrived when practical tests and results are being sought for, and the machines will depend entirely on their practical work.

Our refusal to enter into any combinations to create a monopoly on patents and hollow building blocks at one time offered has been of more benefit to the industry at large than to ourselves



EUREKA MIXING MACHINE OF THE EUREKA MACHINE CO., JACKSON, MICH.

personally, but we are more pleased and satisfied with our action as time goes on.

We desire to specially commend Rock Products for its broad gauge, liberal and fair treatment of all concerned in the development of this new industry, and we hope that it will continue to do so, always prominently promulgating the fact that the industry has well outgrown the early schemes and dreams.

One word more—even the most prosaic business has an interesting side to it. Rock Products, by its sympathetic and encouraging treatment of the subject, is bringing forward much that is interesting in the early history of the business, and we think that under the encouragement so given to contributors, the readers of the paper will in time notice the gradual development of what might be called the history of the Romance of the Blocks. It will prove interesting to any block man, no matter how practical and business-like he may be, and we hope to see more of it follow.

Satisfied with Steady Growth of the Business.

The Hayden Automatic Block Machine Co., Columbus, Ohio, is one of the reliable concerns manufacturing machinery for making concrete building blocks, having established a good, sound reputation. Mr. W. B. Hayden, the vice president of this concern is the inventor of the Hayden machine, and Mr. W. M. Scott, the manager, is the practical man who has contributed no little to the element of success which has attended the enterprise, for he has been with the concern from the beginning dating back two and one-half years, and he is one of the most persuasive apostles in preaching the advantages of making the building block by the face down method. Mr. Scott claims that no machine is practical that it not constructed so that



RESIDENCE OF C. D. NEHER, SHELBYVILLE, ILL., CONSTRUCTED WITH PETTYJOHN BUILDING BLOCKS.

the face of the block is made horizontally or in a downward position. This allows the operator to give the face of the block (the part most exposed to the weather) a veneering of material which richer in cement than is necessary for the balance of the block, all the rest of the block being filled up with much coarser material which has equal strength for building purposes.

Mr. Scott declares that in working with many other machines which have side face surface plates the tamping is a very slow and expensive process, and even at that it is not perfect, for the tamping is what counts and it is evident that one can tamp better straight down than on one side, no matter how skillful the operator may be.

This company has devoted a great deal of attention in the past year to further perfecting their one machine, which already seems to have reached its highest attainments. They have introduced a broken ashlar face plate for producing a rock face broken ashlar effect in the regular stone courses of buildings. This machine is of exceptionally heavy construction, and makes lintels, window caps and belt course stone, cornices and moldings by merely changing the plates on the one machine. The company testify to a prosperous year, and they are satisfied with the steady growth the business shows on every hand.

Observations of the Wichita Coal & Material Co.

Our experience is limited to about six months, but during that time we have witnessed greater advances and a greater demand for the cement block product than any line of business we ever engaged in. We started in with a small plant with the idea of making it a kind of a side issue or a summer pastime during the lull in the coal

business, and while we have made very little effort to push our sales, there has been no time since we began that we could fill our orders.

At the present time we are installing a large mixer of our own make, increasing the capacity of our dry house, and within two weeks will be producing five times the stone we have in the past, and instead of being a side issue to our coal business, our coal business is becoming a side issue to our stone business.

We had the usual amount of prejudice, in fact, we believe, a little more than the usual amount, to start with, but now there is very little natural stone used, although Wichita is only twenty miles from the large quarries which produce a fine quality of building stone, reached by three direct lines of railroad.

Within the past few months we have also put in a factory for the manufacture of the Reed cement block and brick machines, the sale of which we have secured for the United States and Territories and find that the demand for our machines is almost as much in excess of the output as is the demand for stone. We are increasing our factory for manufacturing our machines so as to be in shape to take care of the large orders which will be given early in the spring. Our machines are being shipped to all parts of the country, the last shipment being made on a telegraph order from California.

We have under construction a concrete mixer which will, without a question, revolutionize concrete mixing, as this machine, with slight assistance of one man, will operate itself, mixing two batches at the same time. Machines will be made to handle as large batches as desired, or as small as required by the trade, without the use of machinery power.

A New Brick Machine Proposition.

The Reading Brick Machinery Co., Reading, Pa., is a new concern that has recently made its appearance in the concrete field. They will be represented at the Cement Users' Convention by D. P. Sanders, the general manager of the company, with a full line of samples of work made on the machine and will have a complete brick machine on exhibition there. Mr. Sanders expects to meet many of the active concrete workers of the country, and to present to them in detail the intrinsic excellencies of their brick machine. This machine makes ten brick to the mold, is tamped by hand and the tests which it has received demonstrate that it is capable of doing first class work.

Mixing Machinery of Scientific Exactness.

The United States Concrete Machine Co., Detroit, Mich., have devoted their energies for the most part toward the perfecting of mixing machinery. They make the high claim that the Connelly is "The King of Them All," being ingeniously contrived in such a manner that the feed can be adjusted for the several kinds of materials which enter into the concrete mixture, it can be positively regulated at the will of the operator. The exactness with which the Connelly mixer can be made to measure the proportions continuously is best shown by the accompanying drawing. If the materials are properly fed to the supply receptacles of the machine it will automatically sustain an exquisitely correct proportion, as the conveying cups are struck off mechanically in such a way as to be exactly full of material, every one just like the other, and the mixing drum moves with sufficient speed to guarantee the complete intimacy of the mix. All of the buckets are adjustable to their sprocket chains and measure perfectly the several quantities of material. There is no guess work about it. As will be seen by practical mechanics who study the diagram that the capacity of the Connelly mixer for turning out concrete in a large volume is limited only by the amount of material which can be fed to the hoppers.

The Connelly mixer is a particularly attractive proposition to the sand-lime brick industry, as well as to the dry-mix concrete operator, for in handling fine ground dry materials this machine is ideal for perfect measurements and absolute uniformity.

The buckets which carry the material to the mixing drum when handling dry stuff continuously are always filled with exactly the same volume, and where the hoppers are fed by automatic conveyors which keep them always filled with smoothly running material the amount of mixing which can be done with a single Connelly mixer is indeed prodigious, for in such an automatic proposition it can be speeded far beyond any calculation that has been offered for a concrete mixer.

The crowded condition of our columns forbids at this time anything further with regard to this excellent machine. Some of its special adaptabilities will be brought out in a future edition.

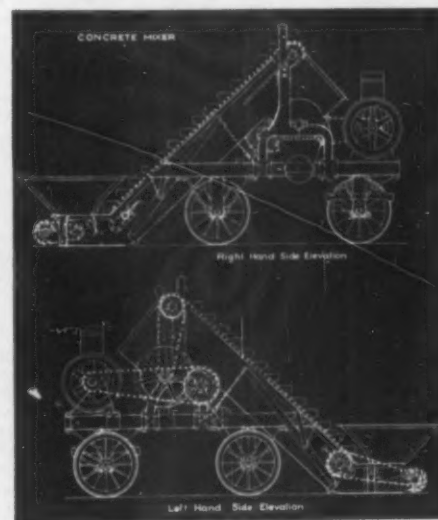
This concern also manufactures the Grant mixer which is a portable machine admirably adapted for the manufacture of hollow concrete building blocks. Both of these machines can be adapted to the requirements of a person who wants a stationary mixer, and can be installed in such a way as to be fed by almost any of the conveying systems that are offered by the manufacturers of such appliances.

Testimony of the Furthest Western Machine Builder.

The Walton Granolithic Stone Machine Co., Kansas City, Mo., have a great advancement to record in the perfecting of their new idea—two piece wall—in which the outside and inside blocks interlock the one within the other in such a way that the breaks in the outside wall always come opposite the solid part of the inside wall. Mr. E. M. Walton, the inventor, and president of the company, says:

I am asked almost daily to explain the difference between the "hollow block" and the "two piece" wall in cement construction, and am asked further why, since both are cement blocks, one should be preferred to the other. As I am the pioneer in the two-piece theory, will you permit me for the benefit of your lay readers, to give the history of the two-piece machine, and my reasons for its development?

After being in the cement business fifteen years, I bought the best standard machine I could find—



MECHANICAL DRAWING SHOWING DETAIL OF CONSTRUCTION OF THE CONNELLY MIXING MACHINE.

a "hollow block" machine—to make building stone, and with all the enthusiasm and confidence of a 15-year-old boy, made blocks, built walls, and, although I built as good walls as are built to-day by any hollow block machine, found it impossible to make a dry wall; this led to investigation and study to remedy this fault, and I soon brought out a two-piece machine—retired the old one and the \$1,100.00 it cost me to the junk pile. Never since that day have I had the slightest trouble about "dry walls" without any expensive facing of stone, or of furring, lath and plaster on inside of wall. No other than a two-piece machine can claim this result. The fact that the hollow block is a continuous block, extending from outside face of block to inside face of block, makes such a result a physical impossibility. The unbroken web of concrete will carry the water through every time. On the other hand in the two piece system, there is no point of contact between the inside and the outside half of the wall—the nearest approach to actual contact is 1/4 inch, and water never will bodily leap this break. This system of construction provides for a perfect natural tie between the two walls, so that no metal ties are used. One year ago there were in this city three hollow block plants, now there is only one. Then there were two two-piece plants, now there are five—which shows how the wind blows in this locality, beside all the best of the hollow block machines are converting them into two-piece machines. Is this significant? Builders here use the blocks now

without question and many architects specify the two-piece blocks without asking a question, whereas a year or two ago it required explanation and argument to secure a single order.

The Pettyjohn Co., Terre Haute, Ind.

We make two different models of machines for producing concrete building materials, one using, for the facing model, granular concrete face plates instead of iron face plates, thus making blocks that are granular in looks, in texture and to the touch, and which presents an extremely handsome appearance. This is an improvement developed by the Pettyjohn Co., and is exhibited in the accompanying illustration.

The machine upon which these blocks are made is what is known as a face-down machine, but the upright Pettyjohn model makes the block with the face on the side. Both machines have been well received by practical manufacturers, and a large number of the users of Pettyjohn machinery are at the present time successfully operating both models side by side.

Referring to the house in the illustration, it was erected by Mr. C. D. Neher, of the Shelbyville Handle and Milling Co., Shelbyville, Ill., as a residence for himself. This building represents the first job that was made immediately after the machine was received from the factory by workmen who were entirely unfamiliar with the manufacture of artificial stone, and with no other information or instructions than were received from the printed directions of the Pettyjohn Co. The excellent results in this case are only one of many which could be shown to exemplify how easy it is for even inexperienced persons to obtain good results, if they have first class machinery to work with, and give the subject a reasonable amount of care and attention.

Regarding our business, we will say it has been exceptionally good, and has far exceeded our fondest expectations. We feel that a considerable proportion of our success is due to our advertising in *Rock Products* and wish to thank you. We have made sales in nearly all parts of the civilized world. We shipped eleven outfits to Wales during ten days' time recently, and at the same time were also making shipments to England, France, Germany, Russia, Bermuda, Egypt, South Africa, Brazil and other foreign countries.

To give you an idea of what has been done will say we have established over 200 plants during the present season in the State of Illinois, and some of them are using as many as a dozen machines. The manufacturers of the blocks realize that the only correct way to mold them is to move the machine and not the block so we have much cause to congratulate ourselves, and certainly feel that "we're it." We have recently greatly enlarged our factory and are making arrangements so that we hope to be able to fill orders promptly during the spring. We lost dozens of orders last spring owing to our inability to promise prompt shipment.

The Miracle Pressed Stone Co.

No account of the progress of the concrete building block industry would be complete without a mention of the Miracle Pressed Stone Co., Minneapolis, Minn. O. U. Miracle personally is known to be one of the active pushers in the concrete industry. During the year they have perfected their cement sewer pipe machine which has been adopted by many towns and cities as far West as the Pacific and penetrating into Canada and all over the United States. Miracle pressed stone is known wherever the industry has reached, and many successful plants are now operating which use the Miracle machinery exclusively.

Mr. O. U. Miracle is president of the Northwest Cement Users' Association, which holds its next meeting January 17, 18, 19 at Minneapolis.

Successful from the Start.

The Blakeslee Concrete Block and Machine Co., Columbus, Ohio, is one of the concerns which entered the business a little more than a year ago, and from the start began to carve out an enviable career for themselves. The pattern of their block at the time it was introduced was quite a departure from anything that had been offered, but by a steady policy of being perfectly willing to demonstrate the merits and high qualification of their system for building the hollow concrete wall, they have gained the confidence of the public and secured for their patrons very satisfactory profits from conducting their factories in a business-like manner.

During the past year the Blakeslee machine has been carefully gone over, and every part carefully considered for the purpose of perfecting anything which might be corrected. From the start they have offered quite a variety of face plates such as tooled stone, bushaxed and broken ashlar effects.

The Hercules System Maintain Their Leading Position.

The Century Cement Machine Co., Rochester, N. Y., from the first appearance of the Hercules about two years ago, have taken the position in the front van of the procession of concrete machinery producers. Their machinery has been designed by able and experienced mechanical engineers and constructed of the best material that is possible to secure. They were the first to introduce the high art feature in their product, and now present highly ornamental belt courses and window caps having the finished touch of perfect design. Their fluted and plain-round columns, ornamental caps and pedestals, keystone and arch members have been the admiration and emulation of many of their brethren in the machinery line.

Their building block machine was christened "Hercules," at first to denote the strength and durability of the parts from which it was constructed, but is now rather accepted as meaning a powerful member of the craft as the simile would indicate.

This concern has made it their special business to study the requirements of the contractor and builder, and they bring out new things as fast as they are proved to be a complete and profitable proposition.

Standard Machine Co., Kent, Ohio.

This is essentially the age of labor-saving inventions. Old methods are rapidly being superseded by more modern and up-to-date inventions. One of the most serious drawbacks to the hollow block industry has been the improper mixing of materials. Not only is it next to impossible to get the proper proportions but also practically impossible to get an even mix by hand. Many blocks are put into buildings to-day, showing streaks of sand which disintegrate, leaving unsightly holes in the blocks, to say nothing of making the building positively unsafe. All this can be obviated by a mixer similar to that manufactured by the Standard Machine Co., of Kent, Ohio. Not only does this machine save time and labor, two very important items when it comes to making a profit in your business, but it absolutely precludes the possibility of an uneven or bad mix. The machine does the work of four men with two, thereby sav-

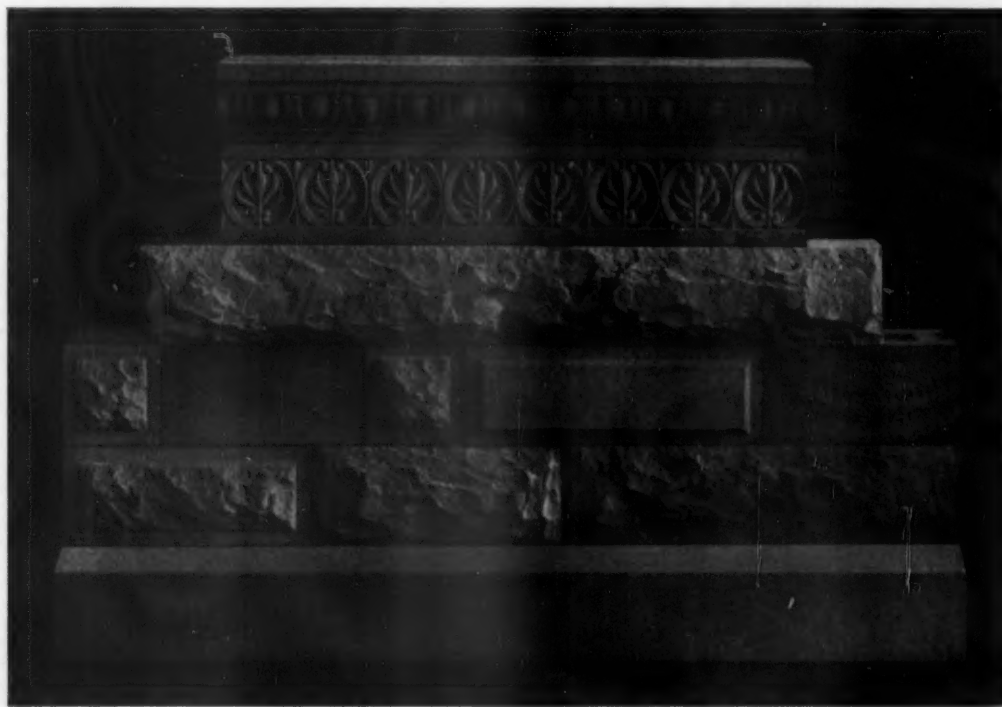
ing half in labor. It has two hoppers which can be so regulated that the proper proportions of sand and cement are allowed to go into the machine to be mixed and can be regulated to run fast or slow so that the men handling the mix can use it up as fast as it comes out. This is itself an important feature as the mix should be used as fast as possible because crystallization begins to set in as soon as the water is applied. There are a number of concrete mixers on the market but none so far especially designed to meet the exacting requirements of the concrete building block manufacturer.

The Standard Machine Co., in placing the Standard continuous concrete mixer on the market, do so with the positive assurance that it will meet every requirement of the concrete block manufacturer. The machine is the result of a series of long and expensive experiments, extending over a period of several years, and were conducted by the inventor with the sole object in view of obtaining a practical mechanical mixer for his own use in the manufacture of concrete blocks, after learning from actual contact with the work that the mixing of the material by hand is very unsatisfactory, very unreliable and very expensive. The machine comprises two hoppers, one a large one for sand and gravel, and the other a smaller one for cement, a mixing trough, a shaft provided with mixing and conveying blades operating with the trough and means for distributing water to the materials after they are thoroughly "dry-mixed."

By changing the position of a single lever the operator can adjust the two feeds simultaneously to deliver any desired output within the capacity of the machine without changing the speed of the driving shaft, or can stop the feed entirely without stopping any other part, thus continuing the operation of the mixer shaft and cleaning out the trough. This feeding device feeds equally well sand and gravel, dry or saturated with water, a feature possessed by no other machine. The bearings are given special attention and either metal shields or felt washers have been provided to keep the sand from reaching them, besides ample provision of thorough oiling. The mechanism is simple and not easily gotten out of order, all of the parts being interchangeable, and those liable to wear are designed to be easily replaced.

The inventors of this machine will exhibit at the Milwaukee convention.

Last but not least, there is Stevens, of Chicago, he of "Roman Stone" fame, who has accomplished so much in reproducing the beauties of classic architecture in concrete material. In the last issue of *Rock Products* we told of the progress that he has accomplished in his special line of endeavor, and the success that he has made in bringing his system of ornamentation to its present state of perfection.



STANDARD SAMPLES OF STONE MADE UPON THE "HERCULES" MACHINE, BY THE CENTURY CEMENT MACHINE CO., ROCHESTER, N. Y.

A Block Making Outfit for \$30.00.

The Illinois concrete block machine is a departure from others now before the public because of its low price and simplicity. It also has the adaptability, durability and rapidity of the high-priced machines.

This machine (which makes blocks with rock, plain and corrugated or tool face, 20 inches long 8 inches deep and 8, 10 or 12 inches wide) is made of high grade gray iron castings with stationary cores which insure a perfect hollow in the blocks in every case, and as there are no cogs, gears, springs, or other complicated machinery to operate, or get out of order in drawing the cores on the mold, skilled labor is unnecessary. Another important feature is that it does not require expensive metal pallets. Wooden pallets are used which are cheaply made.

The block is carried away to the place where it is to be cured before the mold is removed. The latter operation is done by simply removing one pin. This very strong point must certainly appeal to any intending purchaser as it is well known that considerable time (which means money) is wasted on most block machines on account of having to remove several pins and various parts of the machine. Many blocks which are carried away on pallets after same is taken from the mold are broken while being carried to the curing rack and in many instances the breakage is not discovered until they are handled for shipment and in some instances the breakage is not discovered until the blocks have been set in the wall. The blocks are not made face downward, but are tamped on end and around cores thus insuring uniform density and perfect blocks.

The handles on the face plates, cut of which appears herewith, shows how easily and simply



NEW ILLINOIS BLOCK MACHINE.

the mold containing block can be removed by lifting it up from the bed and cores. The cut also shows how the pallet is thoroughly gripped by the lugs on the face plates.

No one can afford to overlook the opportunity to purchase so economical and substantial a building block outfit for \$30.00, and if you intend purchasing a block outfit that will produce the greatest number of perfect blocks at a minimum cost for labor and material, we would suggest your writing for further particulars to Indestructible Post Co., First National Bank Building, Chicago.

Very many of our machinery friends have failed to contribute to this article, but we hope in the near future to give them a chance to have their say with regard to the improvements that they have to offer to the concrete operations of America, for it is the policy of Rock Products to let every man who is worthy have his chance and add his testimony, so that the college of all the divers opinions may act as a common educator and elevator to the great and growing concrete industry.

C. McIwain, of Jackson, Tenn., contemplates organizing a stock company for the manufacture of concrete blocks at Humbolt, Tenn., in the near future.

The Evanston Hydraulic Stone Co., of Evanston, Ill., has been organized with a capital stock of \$15,000.00, by G. W. Esentrowt, F. H. Gill and E. A. Parsons.

The William E. Howes Co., 328 Market Street, Camden, N. J., has been organized to manufacture artificial stone, building materials, etc., with a capital stock of \$50,000.00. Curtis T. Baker, Herbert E. Harris and W. E. Zeller are the incorporators.

Effective Use of Concrete.

Of course in the opening and building of the great irrigation canal from the Truckee river down into the semi-desert regions of Nevada, immense quantities of concrete were used. The most of this material was employed in lining the interior of the several long tunnels; also the bottom and walls of the open canal.

However, one of the heaviest and most effective pieces of concrete work was that of the main diversion dam, and the mouth and gateway of the intake canal. The width of the diversion dam is about 175 feet, and its height 40 feet. The obstruction is composed principally of reinforced concrete, and some stone. It is this dam that must resist the entire force of the Truckee river. During its highest stages, this stream has a very swift and powerful current, and a great volume of water flows down its channel.

The dam has been constructed in the most compact and resistful manner, and no flood, however high and sweeping, could carry away the obstruction that opposes its fury and force. The stability of the diversion dam and the powerful headgates are splendid specimens of engineering. The difficulties of building the dam through and across the swift waters of the ice-cold Truckee, were many, especially in laying the foundation work; but the engineers and workmen slowly, but surely triumphed over every obstacle, and the dam stands to-day an enduring monument to the skill of the engineers, and the possibilities of what may be accomplished with concrete.

The mouth of the intake canal has been very largely constructed of the same material, and is capable of successfully resisting all the lateral force of the rushing stream at all stages. In width the head gate is about 45 feet, and of the same height as the large diversion dam. The system of working the gates is similar—so that the flow of water into the mouth of the canal may be easily and swiftly controlled at all times. The canal was built by the United States at vast public cost, and the work shown in the accompanying photograph has, along with the rest, met with the highest commendation from the representatives of Uncle Sam, whose duties were to examine critically and accept the results of the contractors' skill and arduous labors.

A Fine Concrete Railroad Depot.

There are many fine and costly depots in California, and on the Pacific Coast for that matter; but there is but one that is composed entirely of concrete. This belongs to the Santa Fe System, and is located in Oakland—the extreme western terminus of their transcontinental line.

With the exception of the doors, windows and office fixtures, furniture, etc., the whole building is of concrete—that of an extra superior quality. The roof is composed of handsome red clay tiling. In point of architectural style, this large depot is somewhat Spanish—after the type of some of the old Spanish missions of Southern California; at least it is suggestive of the style. The most of the exterior of the building has a rough finish and in imitation of natural stone. Withal it is very handsome in its style and effect. Everything is "native material"—except the glass in the windows. Portland cement, tiling, and the wooden parts were all produced in California.

No doubt this is merely the beginning of the use of concrete for constructing depots, and that many others will be built in the near future on the Pacific Coast.

Many National Examples.

MINNEAPOLIS, MINN., December 8.—This city is becoming recognized as one of the leading centers in the United States for the adoption of concrete structures of various kinds. A number of new buildings are now under way and others are being contemplated by prominent residents to be constructed of concrete. We have a number of prominent structures here which have been erected during the last year, which have attracted considerable attention from outside sources. There are always parties visiting the city to inspect these structures with a view towards erecting similar buildings in their home cities. With few exceptions, Minneapolis is now being recognized as possessing the most advanced ideas in concrete construction, and indications now point towards a very much increased activity next year along these lines. There are numerous structures which could be mentioned as examples of this, and they have been admired by practical men throughout

the entire country, as exemplifying just what can be done by other cities along the same lines.

We Stand Corrected.

JACKSON, MICH., December 6.—The Cement Machinery Co. write us, calling our attention to an error of which we stand corrected: "In the write up which you have given us regarding our Favorite brick machine in your last issue of Rock Products, you have given our address as Jackson, Miss. We would appreciate it very much if you would make mention of this error in your next issue of Rock Products."

Good Year for Block Concerns.

BLOOMINGTON, IND., December 6.—The Monroe County Artificial Stone Co., which has a large concrete block plant here, has had a very successful year's business, having erected a number of residences and other structures of concrete blocks. The fact of the matter is that they have been so rushed during the past few months that they have been unable to meet the demands for their output. They have a well equipped plant operating six or more machines of the H. S. Palmer and Fettyjohn Co.'s makes. Considering the fact that this company is located in the heart of the Indiana stone district, it would appear that they would have little call for artificial stone, but practically ever since the company's organization they have had plenty of orders, and the business has increased continually. The indications are now for a much larger demand for concrete blocks next year as it is possible that the plant will be considerably enlarged some time during the spring.

A Prosperous Outlook.

READING, PA., November 26.—One of the new and prosperous concerns in this locality is the Temple Cement Stone Co., which has recently completed a nice plant here. It is 40x115 feet, one story in height, and is divided into several sections for the manufacture of concrete blocks. This company has just purchased a 20 h. p. motor to operate the concrete mixer which has just been purchased from the Municipal Engineering and Construction Co., Chicago, Ill. Operations have just started and they will employ about a dozen men. They have already a large number of orders on hand to keep them employed for at least two years. They intend to enlarge the plant in the spring and the blocks will be manufactured from Portland cement and Mount Laurel slag. Aside from the manufacture of concrete blocks they will engage in the manufacture of cement sewer pipe. The officers of the company are: President, John F. Ancona; secretary, Paul Davis, and treasurer, Dr. Horace E. Schlemm.

SOMEWHAT PERSONAL.

Thomas Brady, president of the Copley Cement Manufacturing Co., New York, was called South with his wife on account of the severe illness of his son at the Old Staunton, Va., Military School. The many friends of Mr. and Mrs. Brady will be glad to know that the boy is fast recovering. Mr. Brady is one of the large contractors in New York, and in speaking about business prospects in building lines in New York, said that with the big work already started and the prospective jobs in hand that the new year bid fair to outrank any previous year and perhaps no city in the world is doing the same amount of building as Greater New York. The old original Portland and Saylor brand has been holding its own and is a favorite as of

The many friends of Ralph Peverley in New York, will regret to learn of his severing connection with the business, and, strange to say, he is aspiring to be one of New York's great caterers. Certainly every one in the cement business, as well as the builders' supply lines will wish him God-speed, and if he concludes to excel Sherry and Rector the builders' supply trade will certainly be with him on all occasions when they visit the metropolis.

W. S. Humbert, of Buffalo, he of cement block and builders' supply lore, was a Philadelphia visitor recently in anticipation of a day at Atlantic City. Mr. Humbert looks forward to a good, big year in 1906.

Lester Bennett, of the Buffalo Cement Co., was spending the last days of December among his friends in New York City enjoying the shopping season and Santa Claus, although he is still numbered among the bachelors. He was of the opinion that 1906 would be a hummer in builders' supply lines.

Cement.

A Market Across the Seas.

The demand for Belgian cement in South Africa is still quite active according to reports from the Consul-General at Johannesburg. The largest concerns in Johannesburg contract for cement in ten and twenty thousand barrel lots, delivered according to orders at specified times. The local municipality employs German cement altogether in its operations, and this same cement is also being largely used in the construction of many buildings in the above city.

The value of cement imported from Germany in 1904 amounted to nearly \$25,000.00; from the United Kingdom about \$11,000.00, and from Belgium in the neighborhood of \$2,000.00. Owing to the fact that German cement can be purchased at a lower price it has the preference in many parts of South Africa. It is shipped by steamer via Suez Canal and arrives at Delagoa Bay. In some other sections of South Africa, namely, East London and Cape Town, English cement is given the preference.

It seems possible that American cement manufacturers might secure a new opening for activity in this far away country, provided they could compete in price with German and English cements. There can be no doubt but that the cement manufactured in this country is superior to any other in the world, and while the consumption here is gaining very largely each month, there is no reason why the American manufacturers should not endeavor to enlarge their territory and seek new fields for action beyond the seas.

May Establish Philippine Cement Plant.

Reports have been received lately to the effect that there has been found at Binangonan a valuable deposit of limestone which has been shown by analysis to be suitable for the manufacture of cement. In addition to this there is a valuable clay deposit in the vicinity and this, together with good water transportation to Manila, has interested capitalists so that they are considering at the present time the erection of a modern rotary kiln cement plant which will cost not less than \$225,000.00. Further information can be gained by addressing the director of the United States Geological Survey, Washington, D. C.

A Possible Cement Plant in Iowa.

FORT DODGE, IOWA., December 6.—Fort Dodge is taking a deep interest in the investigations and prospecting now going on looking to the erection of a 2,000 barrel cement mill in the near future. Arrangements are well under way for the organization of a company and the only remaining question to be solved is the quantity of limestone rock to be had. This will be determined in the course of a few days.

The chemical analysis of the rock available for use is found to be as follows:

Silica	0.62
Alumina	0.50
Calcium Carbonate	98.62
Undetermined and water	0.26

100.00

It will be seen at a glance that the stone is essentially pure calcium carbonate. It contains practically no iron or magnesia. In addition to the splendid quality of the rock, the low price of coal mined adjacent to the city, and the near proximity to the river affording an adequate water supply, it has been found, that along the river banks, which flows by the land on which the limestone is located, there is a large quantity of pebbles suitable for the ball mill. This find will save the owners the expense of importing them from Denmark and provides an additional profit to the natural resources.

Without doubt, the tests now being made as to the quantity of stone available will be determined in a short time and if sufficient quantity is as-

sured, the project will be brought to a speedy close with a view to placing orders for the construction materials and necessary machinery. The project is being handled through the Fort Dodge Commercial Club and bids fair to be one of the great mills of the country. In view of the fact that there is not now in Iowa a mill manufacturing cement and that Iowa is a very large consumer, it is regarded as practically certain that the local mill will be able to place a large percentage of its product in its home State.

Big Plant Projected in Utah.

It has been reported on apparently authentic authority that an immense plant for the manufacture of Portland cement will be established in the near future at what is known as the Devil's Slide, near Echo, Utah. The report says that the plant will have a daily output of 2,000 barrels, and that the cost of erecting the same will be in the neighborhood of one million dollars. It is said that the supply and quality of the cement shale at this point is inexhaustible and of such a nature as to make it of very fine quality of Portland cement. It is believed that the construction of this plant will begin early in January, and it is said that when completed the plant will be one of the largest in that section of the country and will give employment to a large force of hands.

The new plant will be under the management of Mr. Aman Moore, who is considered one of the best practical cement men in the West. He was the former manager of the Portland Cement Co., Portland, Colo., and has resigned his position with that company in order to enter upon his new duties with the proposed organization.

Have Excellent Prospects.

LOUISVILLE, KY., December 20.—The Kosmos Portland Cement Co. say: "We are very much pleased with the results obtained so far, as well as the outlook for the future, and have a great many orders booked for immediate and future shipment, many of which are of considerable size and for work of the greatest importance. Our company has arranged with some of the most representative concerns in the best towns throughout its territory to act as local agents, which will add largely to our sales. Owing to the high quality of 'Kosmos' Portland cement, little difficulty in disposing of the plant's output is expected, as the troubles usually connected with the marketing of a new cement will be entirely eliminated."

"The company has in its employ none but the most competent and reliable men, who are thoroughly familiar with every detail in connection with the manufacture of Portland cement, and while the mill is perfectly constructed after the latest and most improved methods, and though the raw materials are of the most regular and uniform nature, no chances are taken. It being required that all raw materials, as well as the finished product, be thoroughly analyzed and tested before it is allowed to go on the market."

"The company expects to supply a great deal of cement to manufacturers of concrete hollow blocks, cement pavements, etc., as owing to the light and uniform color of the cement, as well as its fineness and gradually increasing strength, it is looked upon as being more suitable for work of this nature than any other cement."

New Pennsylvania Organization.

FOGELSVILLE, PA., December 12.—Arrangements are under way here for the erection of a large Portland cement plant, and the property purchased from Colonel Trexler. The name of the organization has not been given out, but it is understood that the daily capacity of the plant will be about 5,000 barrels. Temporary buildings are now being constructed and operations will be under way within a reasonable time.

Has Purchased Mill to Improve It.

GRAND FORKS, MINN., November 28.—The property of the Pembina Portland Cement Co., near Milton, Minn., has been purchased by Dan Bull. It is the intention of the new proprietor to make a large number of improvements in the plant, thereby increasing its capacity from 100 to 500 barrels per day. The quality of the cement heretofore manufactured has been of a very high order, but from the fact that it had to be transported about a dozen miles by wagon, has seriously handicapped its sale. An effort will be made, which is believed will be reasonably successful, to induce the Great Northern and perhaps the Soo road to build a switch to the plant some time early in the year.

Big Plant for Texas.

EL PASO, TEX., December 9.—The Acme Cement Co. will likely erect a new plant at Roswell, Tex., where a valuable deposit of gypsum has been discovered. In some sections this bed extends to a depth of over 40 feet and is almost pure. From what can be learned regarding this new project, operations will be started about January 1, and the plant will have a capacity of 180 tons per day. The process will be to plow up the gypsum, grind and dry broil it in a kettle until something like 7 per cent of the moisture is removed; this makes a perfect cement. At least 100 men will be given employment and operations will be conducted on an extensive scale.

Will Increase Capacity.

DENVER, COLO., November 26.—The Portland Cement Co. write us to the effect that its plant is being enlarged to 600 tons per day of cement and 200 tons per day of plaster. They have had a most successful year, and with the increased output will be in a position to handle a large amount of orders next year, which they confidently expect.

Desires an Inspection of Its Affairs.

EASTON, PENN., December 5.—A bill in equity has been filed by Chas. Pfister, of Milwaukee, Wis., against the National Portland Cement Co., of Martins Creek, asking that a receiver for the company be appointed. This company is composed of the Alpha Portland Cement Co., of Pennsylvania. The case will come up for hearing the latter part of the present month. Mr. Pfister owns fifteen \$1,000.00 gold bonds of the defendant corporation. These are secured by a mortgage given by the Northern Trust Co., and H. O. Edmunds, Chicago, Ill. Mr. Pfister makes a claim that the affairs of the company have not been carried on as should be, and desires to have the books shown for an inspection.

Something New for 1906.

CHATTANOOGA, TENN., December 15.—The Chickamauga Cement Co. write us saying: "We have made a number of improvements in our plant during the year 1905 and we expect to do more in the year 1906. We take pleasure in stating that the principal enlargement to our business this year has been our plant for manufacturing hydrated Portland lime. This material possesses a great advantage over ordinary hydrated lime, as it contains a considerable portion of cement and is therefore strongly hydraulic. Another advantage is that it contains a very slight percentage of magnesia and iron oxide, which makes it especially adapted for use with Portland cement in making mortar for laying Bedford and other stones, because of its non-staining and strong hydraulic properties. Our sales of this material far exceeded our estimates and early last fall we were compelled to double our capacity."

"For 1906 we will establish two new departments to our business. One of these is the equipment of a wood fiber plaster mill. We possess an abundance of material suitable for making this fine grade of plaster, and we will have this plant in operation soon after January 1. The other branch of our business will be the manufacture of what we might term 'American La Farge Cement.' We possess a large deposit of silicious limestone that is practically identical in analysis with the rock from which the celebrated French product is made. Our method of treatment is precisely the same as that used in France. The resultant cement is very nearly white in color and gives a tensile test of over 300 pounds in seven days. It contains less than one per cent of iron oxide. We expect to have this cement ready for the market in time for the spring trade."

To Greatly Enlarge Plant.

CANTON CITY, COLO., December 10.—The Portland Cement Works, at this place, which is under the management of a Mr. Moore, will be considerably enlarged within a short time, which will give the mill an output of 2,500 barrels per day. It is said that additional equipment has been ordered and other arrangements are now under way for carrying out this project. This addition will give the local plant a very large capacity, making it one of the biggest plants in the manufacture of Portland cement in the world. The business of this organization has increased at a satisfactory rate, so that this addition has been made absolutely necessary.

LEHIGH VALLEY ORATOR.

Cement Manufacturers Gather in New York in Annual Convention - Future Most Flattering.

It was a great meeting, the third annual of the Association of Cement Manufacturers, held at the Hotel Astor, in New York, on December 12 and 13, and 78 representatives were at the banquet. The officers elected for the ensuing year were: John B. Lober, president, Philadelphia; Chas. F. Wade, vice president, Jonesville, Mich.; Ernest R. Ackerman, treasurer, New York City. The executive committee, in addition to the officers, is composed of R. W. Lesley, Philadelphia; E. M. Hager, Chicago; S. B. Newberry, Sandusky; Conrad Miller, Nazareth, Pa.; A. F. Gerstell, Easton, Pa.; W. R. Warren, T. J. Brady, New York; W. H. Harding, Philadelphia; E. M. Young, Allentown, Pa.; W. J. Prentice, Pittsburg; T. H. Dumary, Albany, N. Y., and D. Millan, Wayland, N. Y.

As expressions of good will and appreciation of President Lober's excellent work as president of the association, the membership presented him with a handsome silver service. Mr. Robt. Lesley made one of his excellent addresses which was responded to by Mr. Lober, and was followed by the presentation of a book of Friendly Thoughts, containing letters of appreciation from the whole membership for Mr. Lober, and when Col. Brady came up to make his speech he was presented with a bunch of American beauties, and he immediately remarked that he enjoyed beauties in his arms, and then made one of his characteristic talks. The social feature of the meeting in New York was a grand success. The business sessions were well attended and showed a greater interest in organized effort than ever in the history of the business. The second day's informal smoker and luncheon was a very happy affair as well. Among those in and about the Hotel Astor lobby were:

The Cement Crowd.

R. W. Lesley, H. B. Warner, American Cement Co., Philadelphia; A. F. Gerstell, Mr. Longcope, Mr. Kent, of Alpha Portland Cement Co., Easton, Pa.; C. Peters, Max Cappers, Wm. P. Corbett, Alsens American Portland Cement Works, New York; Wm. H. Harding, Bonneville Portland Cement Co., Philadelphia; J. W. Kittrell, Catskill Cement Co., Smith's Landing, N. Y.; R. E. Griffith, Central Cement Co., Philadelphia; Chas. Johnson, Castalia Portland Cement Co., Castalia, Ohio; Norman D. Fraser, D. D. Drummond, Mr. Woodruff, Chicago Portland Cement Co., Chicago, Ill.; Thos. J. Brady, Ralph Peverley, Chas. Sager, Copley Cement Manufacturing Co., New York City; Conrad Miller, Jos. Brobston, C. W. Jones, Dexter Portland Cement Co., Nazareth, Pa.; W. S. Mallory, W. S. Pilling, Edison Portland Cement Co., Philadelphia; T. Henry Dumary, Frederick W. Kelley, James C. Farrell, Helderberg Cement Co., Albany, N. Y.; Edw. M. Hagar, B. F. Affleck, Mr. Metcalf, Illinois Steel Co. (cement department), Chicago, Ill.; Ernest Ackerman, Theo. B. Osborne, Lawrence Cement Co., New York City; Geo. G. Sykes, E. M. Young, Charles A. Matcham, Lehigh Portland Cement Co., Allentown, Pa.; M. J. Warner, P. H. Hampson, Nazareth Cement Co., Nazareth, Pa.; D. McCool, George T. Burrledge, Newaygo Portland Cement Co., Grand Rapids, Mich.; C. P. Jameson, Mr. Shafer, J. L. Bernard, Northampton Portland Cement Co., Stockertown, Pa.; Charles F. Wade, Omega Portland Cement Co., Jonesville, Mich.; Avon Barnes, William R. Yeager, Penn-Allen Portland Cement Co., Allentown, Pa.; William N. Beach, A. L. Alker, Robert E. Bonner, Jos. Loughman, Mr. Bye, Pennsylvania Cement Co., New York City; William Turner, Geo. W. Laub, Phoenix Cement Co., Nazareth, Pa.; P. B. Beery, Sandusky Portland Cement Co., Sandusky, Ohio; E. M. Zeipering, Philadelphia; W. R. Warren, D. E. Rainhard, Virginia Portland Cement Co., New York City; John B. Lober, W. D. Lober, J. R. Dunn, Philadelphia; S. W. Hartwell, W. D. Moyer, Vulcanite Portland Cement Co., New York; George Bartlett, C. J. Van Dom, Western Portland Cement Co., Yankton, S. D.; Thomas M. Righter, Howard E. Green, W. C. Kent, Mr. Rider, Mr. Watson, Mr. Erdel, Whitehall Portland Cement Co., Philadelphia, Pa.; Charles Wood, Wolverine Portland Cement Co., Chicago, Ill.; Deane Millen, Thomas Millen Co., Wayland, N. Y.; Theo. Dickinson, Wm. Dickinson, Marquette Cement Manufacturing Co., Chicago; C. Earl, E. Bottomley, assistant secretary

association, Philadelphia; G. F. Bayle, F. W. Douglass, Glen Falls Portland Cement Co., Glen Falls, N. Y.; J. Maxwell Carrere, Allentown, Pa.; J. M. Goodell, New York; R. L. Humphrey, Philadelphia, Pa.; Mr. Cook, representing Raymond Bros. Impact Pulverizer Co.; H. C. Haight, Thos. Prosser & Son, New York; E. R. Kimball, Kent Mill Co., New York; C. A. Hall, Allentown, Pa.; B. B. Taggart, Watertown Paper Bag Co., Watertown, N. Y.; John Sanger, New York City; G. S. Emerick, Victor Emerick, Nazareth, Pa.

Manufacturers Talk Shop.

Had you turned all the bulls loose after an active day on the Board in Chicago and in Wall Street, New York, you could not have found more of them tossing their horns than in the lobby of the Astor when the cement men gathered together to visit and talk it over. The first exclamation would be, "Well, we certainly will have the greatest business in our history in 1906." The second would be, "Without exception the stock houses are practically cleaned up or will be by January 1." Third, the tendency of manufacturers is not to make long winded contracts as in times past, but of course they will take care of their customers as the months go by at the market price, thus eliminating the speculation of the past and insuring a greater stability to the market on cement, which will not only benefit the manufacturer, but the dealer and contractor and every one connected with the business. It is true that the production of cement will be very much greater in 1906, and probably will reach 35,000,000 barrels, if not 40,000,000, but there has been no line of building materials that has increased in its use like cement in 1905 and with the desire on the part of the manufacturers to make a better quality.

In fact all this expensive machinery put in the past few years has been added to insure the highest efficiency in the manufacture of cement, and therefore the greater possibilities for its use. Pick up a catalogue of any cement company and you can see that there is scarcely anything that lumber has been used for in the past, but what cement can be substituted for it. Therefore the cement manufacturer and dealer and contractor are practically the farmer's friend for, starting with the watering trough, he ends up with his big silo for storage where, in the East, he formerly had to use a double-decked barn, so with the new uses and the activity in the old use of cement it is a dead sure thing that twelve months from now the present conditions will prevail and there will be orders enough to clean up stocks on hand, notwithstanding the increased production. These conditions prevailing, manufacturers must be careful that they do not over-do a good thing and get their prices too high, for it would be unbusinesslike to check the prospective demand for this excellent product.

As an illustration of how manufacturers feel it has been said that in the Lehigh district cement would sell as high as \$1.10 at the mill during 1906 and proportionately as high in the West, if not higher. This is only a fair price, none too high, but when you go further than that it will be a great mistake. Wherever you go you are confronted with the cement sidewalk or the concrete foundation, or block house or cement post, and this influence has naturally added to the backbone of the cement manufacturer. The friendly exchange of information among manufacturers is doing great good and the future of the business is in the hands of the manufacturer himself. If he is wise and don't get too optimistic by the co-operation of his customers the dealer and cement world will be full of pleasure during 1906.

The pleasant weather up to the holidays has made it possible for contractors everywhere to complete the most of their jobs and this has been particularly satisfactory in assisting manufacturers to finish up their contracts during 1905.

Among the increased production during 1906 will be the Lehigh's mill at Mitchell, 4,000 barrels, probably completed in March; another addition of 4,000 barrels at their plant near Allentown, Pa., which will be completed in the summer time; also the completion of their 1,200 barrel mill at Belleville, Ont., thus making the Lehigh the second greatest producer of cement in the world. They have also purchased property for the erection of a plant in Illinois which will be built in due time.

The general manager of this company, Mr. Chas. Matcham, is considered a giant among manufacturers of cement, and in connection with his active partners, E. M. Young and Secretary Sykes, the prestige of Lehigh grows day by day.

The Messrs. Dickinson of the Marquette Cement Co., Chicago, advise us that they will put in a 600

h. p. engine and apply electricity by a separate motor to the operation of their mill. Also four 400 h. p. water tube Sterling boilers and two 900 h. p. compound condensing engines made by the Fulton Boiler and Engine Works, St. Louis, and two 800 kilo dynamos made by the Western Electric Co. Their power plant will be in a separate plant of steel fireproof construction with cement roof, and Manager Theodore Dickinson has lived with this plant for the last three years, and the results have been more satisfactory than ever of their prospects for 1906 business, general sales agent William Dickinson says, are very fine.

With the smallest stock in the history of the business the demand and price ought to be more satisfactory. It is to be hoped, however, in the early months of the year, that manufacturers will not be too anxious to take business except for immediate delivery.

Economies in the manufacture of cement have been more generally practiced in the construction and reconstruction of plants, and the hope is that manufacturers will take advantage of these larger investments to co-operate with the end in view of manufacturing a staple product, and by closer co-operation with the chemist be in position to guarantee absolutely the goods manufactured, and then insist on the purchaser receiving and paying for his goods, rather than being at the mercy of the whims of the buyer who often knows very much less about what he is buying than the manufacturer who is selling. With the excellent laboratories and high priced men to test the material from the time it leaves the quarry until it is delivered in the bins, and keeping a record of the component parts of manufactured cement it seems ridiculous to have a man, because he happened to be an engineer for a big railroad system, and having not nearly so good a laboratory or as familiar with the manufactured cement as the man on the ground, turn down a shipment of cement at its destination because he did not know how to thoroughly test its abilities to fill the bill.

A large manufacturer was telling me the other day of an experience he had. He made it his business to get acquainted with the engineer of a large corporation and have his superintendent to go to the laboratory of the buying engineer and test with him material from the same barrel, with different results, but after going through the series of tests, the engineer being convinced that he was lacking in knowledge and that the manufacturing chemist knew what he was talking about when he said the cement delivered was perfect in quality, and the complaint turned out to be to the advantage of the manufacturer in question. The cement manufacturer, being a broad gauge man, said to this engineer: "Any time you have time and the opportunity to spend a few days at our plant we would be glad to give you the advantage of our knowledge, allowing you to go through our plant and inform yourself as to the details of the manufacture of cement." The engineer was so interested he spent ten days at the plant in making various tests of his own, thus not only familiarizing him with the details of the business, but making him a more intelligent buyer, and it was a great advantage to the whole cement industry for his company were large consumers of cement.

There has been a tendency among manufacturers to be very secretive about how they did this, that and the other, but as long as the engineer can reject cement at will if it does not happen to suit his ideas, this practically demonstrates the advantages to the manufacturers themselves that opening up their back doors to the purchaser will make it that much easier to increase the uses and volume of business in cement. Occasionally you will find a man who is a chemist or an engineer, or just a plain purchaser of cement, who will question its name and even question a certain brand. This, we think, is not the proper way to look at the proposition. If a certain brand of cement is used and gives satisfaction what is the difference what you call it? At the same time, a manufacturer, no matter what his cement is made out of, or how it is mixed, should know exactly what it will do.

I saw some microscopic demonstrations of the component parts of cement the other day made after the various tests, convincing me very properly that the man behind the gun of that institution was a student of his business and when the big engineer, who was very particular about what he was buying and the materials of construction, looked up to the president of that concern to find out about a 50,000 barrel order he would soon be convinced that he would have no trouble with the quality and then it would only be his business to find out how cheap he could buy it. The chemist

and engineer may differ in their views. In fact I know a good many who, when they discuss the subject, are invariably at variance in their opinions, and while perhaps the same methods are applied there may be room for differences in opinion as to the quality of the cement in question. Therefore if the manufacturer has his data in good form he is not at the mercy of the whim of an engineer or chemist.

A lime manufacturer said to me the other day, "The curse of the cement business has been these long winded contracts. Not only to the dealer, but to the manufacturer. When a man makes a contract no matter what position he is in, how large he is or what the color of his hair is, he ought to live up to it. It does not matter how many cases you can cite in the past of John Smith & Co. refusing to take the balance of a contract because cement went down, and then insisting on the manufacturer shipping the goods even if the price went up 30 cents a barrel. This abuse has been so flagrant that manufacturers ought to either make a contract that would work both ways or not make any. A long winded contract is a mistake in any event."

One of the old timers in business said the other day, "I sometimes question the wisdom of the present large expenditures in new plants and reorganizing others because of a lack of dividends in some quarters in times past. It is true the manufacturer must of necessity follow the procession if he would stay in the business, but it seems to me that it is a weakness of the American that he is everlastingly putting all he makes, or very near it, into more plant. You would almost think that more capacity is what manufacturers go into business for rather than for producing greater dividends. At the same time, in ordinary years the big plant with well organized selling force, generally does not carry proportionately more stock than the small one, and its fixed expenses are less per barrel. This does not always hold good either, for the very large fixed charges connected with some operations in cement are such that oftentimes the market is disturbed because of the necessity of dumping, but it is true this condition is fast disappearing. We believe the man with the medium-sized plant, who conducts his business so that he is short on cement rather than long on manufactured product, is better off, though sometimes it is necessary to be a regular Ananias during periods of business activity.

One encouraging feature of last year's business in cement has been the fact that in many cases the selling price per barrel has been a little better than it was in 1904 and this, of course, makes a healthy condition.

There has been a lot of agitation among the building material men in New York recently owing to the insistence of the cement manufacturers on terms of 1 per cent ten days or thirty days cash. The fact is that the Builders' Association got so excited that they passed a resolution condemning manufacturers for insisting on terms of this kind, as if a manufacturer of large products like cement could not sell his own goods on the terms he thought were proper. There has been a great abuse of this cash discount, and while there are always two sides to the question, the day was when cement manufacturers were absolutely at the mercy of the buyer and it was any old terms and pay for it when then darned please. Naturally the abuse of a good thing generally terminates the soft snap.

Mr. Deane Millen, in speaking of the old days in cement, said: "It was in 1873 that my father, brother and myself started a little plant at South Bend, Ind. We used to sell all we could make to the government on about a basis of \$3.00 per barrel. You know it was a crude affair. Some days we would make twenty barrels, some days fifty. We sold it for about three dollars per barrel. Some of our cement cost \$10.00 a barrel naturally, but we are happy we have one of the first cement operations in the country, and I believe the old mill is still standing. Compared with some of the big plants now running it was a sort of coffee pot affair, but we thought we were doing something in those days."

It was a triumph of the American cement machinery when a plant was built in Spain with American machinery, by American engineers and chemists producing cement on modern lines and applied American machinery, such as Allis-Chalmers crushers, and tube mills, for foreign plants generally have been built of English and German machinery in the past, but we look forward in the future to seeing cement plants built all over the world and using American methods, American

men, American brains and producing the same high grade cement as we do in America.

The Northwest has certainly awakened to the values of cement and cement construction, and as an illustration of this a fifty thousand barrel order of cement has been shipped to St. Paul this past summer for the new concrete building with reinforced concrete. This order was placed with the Marquette Cement Co., and every fourth bag is tested and not a rejection of any kind." Of course this cement is sold f. o. b. mill, while in other cases manufacturers have shipped f. o. b. point of delivery and inspected there.

Rejections have occurred which might or might not have been shipped; but certainly a man puts himself at the mercy of the whims of the engineer if he delivers cement five hundred miles away without being sure that his production is all right. He can not do this without closely testing it, and while all cement is good, in the majority of cases it is good enough for any job it is put on providing the man on the job knows what he wants and then learns how to mix his ingredients to secure the proper construction. Of course, there are wooden headed people in the cement construction business as well as in other lines, and the cement Consumers Association ought to be beneficial to people not familiar with how to do it, and will prevent a lot of trouble and expense for cement manufacturers.

Bags to Be Paid For.

The circulars going out from cement manufacturers announcing to the trade that sacks would be charged to them at ten cents when shipment was made and a credit of 7½ cents given them when bags were returned, stirred up the trade generally. Owing to the fact that manufacturers had never taken uniform action on this subject has caused great annoyance and considerable expense. As an illustration the using of cloth bags for cement has necessitated in some mills a dozen employees all the time sorting, mending and taking care of the bags that have been returned. In most cases there has been a shortage discovered, some times due to carelessness of the shippers, others to the railroad employees, and the bag account of every cement manufacturer has been of much worry. A charge has been made in many cases, but under the old system many misunderstandings between buyers and dealers have come about from this source.

When the dealer and the contractor understand that they will be held responsible for a part of the cost of bags from ten to twelve cents, and they will be charged with this amount and credited for 7½ cents when they are returned, it will take some time for the dealer to get his trade to understand that it will be a loss to him if he does not return the sacks, and hence tacking 10 cents a barrel on the cement will be some change in the present way of doing business.

The paper bag at the present time has not been so fearfully popular although a number of manufacturers have made a special effort to introduce them, but there is no doubt the new method of charging for every bag will mean the use of more paper bags and possibly more coöperation. There is a bit of a chance of a misunderstanding in the difference of 10 cents a barrel due to the rebate of 2½ cents per bag; but when the trade understands the manufacturers are in earnest in this movement and must secure some returns for something they have to pay money for, no doubt it will be beneficial to all concerned, for the dealer must of necessity make the consumer understand, whether he be contractor, builder or the farmer buys a few bags to use at home, they must pay for these bags if they do not return them, the loss will be shifted somewhat through various channels.

The manufacturers are practically unanimous in their desire to conduct their business on this new basis of keeping an accurate account and charging a man whether he gets one bag or ten thousand, and there is no doubt at all but what the effort to change this practice will be successful.

The great hullaboo made by the suits instituted against the National Portland Cement Co., of the stockholders against the president and general manager, A. F. Gerstall, of Easton, Pa., do not seem to worry this gentleman, although he is carrying a cane and thinking more of the conflict he had with the telegraph pole while out automobile riding.

Mr. Gerstall says he is very well pleased with the Alpha Co.'s business in 1905 and looks forward to the largest business in the history of the trade in 1906. They are still adding to their already complete mills and preparing to give their large list of customers the best service in 1906.

Mr. Norman D. Frazer, of the Chicago Portland Cement Co., Chicago, is about to put in some 136

ft. kilns and make other improvements to the care of their large list of customers. Mr. Frazer is a great believer in the future of Portland cement and is making great preparation to take care of the increased demand.

Mr. Frazer, with other Chicago manufacturers, are enthusiastic in their invitation to the cement consumers to hold their next annual meeting in Chicago. He said there is no doubt but that Chicago will give the cement consumers that welcome characteristic of the big town, and I could almost guarantee the personal attention of all those interested in the business.

NOTES OF THE MEETING.

The Atlas Portland Cement Co., of New York, and most everywhere, the largest manufacturers in the world, are still making increased preparations to take care of their extensive business, inaugurating new mechanical improvements in their old mills and building new ones both East and West.

One of the successful elder gentlemen, who participated in the social gathering of the cement men, is Mr. Conrad Miller, president of the Dexter Portland Cement Co., Nazareth, Pa. Mr. Miller has been a successful railroad man as well as cement manufacturer, and his wide experience elicits the attention of his confreres when he talks to them.

Mr. Edw. N. Hagar, manager of the cement department of the Illinois Steel Co., Chicago, one of the active young men of the cement business, is well pleased with the splendid uniform quality in the well known brand during the year, and the expressions from their many customers on this point. Their sales have been even greater than they anticipated, and they look forward to much greater demand in 1906.

Edw. L. Cox, sales agent of this company, Marquette Building, Chicago, reports their business of the year most successful in the history of their concern. The only regret has been that they have not had enough cement to supply their orders. The new year with the big improvements being made under the superintendency of the president, Fratz Worm, will assist materially in giving their trade excellent service they so well know how to apply.

President E. W. Shirk, of U. S. Portland Cement Co., of Bedford, Ind., is spending a short time in Chicago preparatory to sojourning to the Pacific Coast where he hopes to spend the winter months. Mr. Shirk in addition to being a live cement manufacturer is a banker of some note in Indiana, but since connecting himself with the cement business he is becoming very much interested with the doings of the trade. He reports that the year has been a good one for them and that they are well pleased with the results of the first season's operations.

The Lehigh Valley orator will have to stretch his legs somewhat to get out in the valley of the West; in fact, the day was when the Lehigh Valley in Pennsylvania was the only section of any note in Portland cement industry, but we will soon have several Lehigh Valleys—one about Louisville with Mitchell and Kosmosdale as valleys of the West, and still farther west Iowa, Kan., in the valley where several mills are being erected in addition to Iowa Portland increasing their factory, the Kansas Portland adding to the productions, the Sunflower Portland building a new mill and several other plants, which will show a large increase of the production of Portland cement in Kansas and near-by territory.

The German-American Portland Cement Co., manufacturers of the "Owl" brand at LaSalle, Ill., are very much pleased with the big order which they are now completing for the power house and barns for the Twin City Rapid Transit Co., Minneapolis-St. Paul. The building and yards occupy a space of forty acres and will be the largest and most complete shops in the world. The improvements will cost five hundred thousand dollars. Six hundred thousand hollow blocks and about four million cement brick will be used in this building. The foundations are solid concrete; columns, pilasters, roof trusses, floors, etc., are reinforced concrete. The Peerless brick machines and Perfection power block machines made by the Miracle people, at Minneapolis, will also be used. C. F. Ferrin is the architect. This will be the show building of the concrete industry. It will be illustrated in an early issue of Rock

PRODUCTS.

May Locate at Des Moines.

DES MOINES, IOWA, December 6.—It is rumored that a number of parties are seriously contemplating the erection of a large cement plant here. Quite recently representatives of Eastern capitalists visited here in order to make examinations with this object in view. They were well pleased with the stone found in this section and as it can be easily quarried and all other conditions are favorable, it is possible that the plant will be a realization. In the event that the cement plant is erected here the capacity will be about 2,500 barrels every twenty-four hours. The erection of the same would cost, including land, buildings, etc., about \$500,000.00. No definite action has been taken as yet, but indications are very favorable for the organization of such a company. The matter will be settled within a short time.

A Fine Record.

SANDUSKY, OHIO, December 12.—The Sandusky Portland Cement Co. has had a most successful year for operations. The output is continually increasing and from January, 1905, to August of the same year, this company manufactured 300,000 barrels of cement at its Syracuse plant. They have been unable to meet the large demand for their output and it is probable that the capacity of the plant will be increased next year on this account.

Very Unique Announcement.

ROCK PRODUCTS is in receipt of a very peculiar communication from the Whitehall Portland Cement Co., in the Land Title Building, Philadelphia, Pa.

At first glance, we thought that the Whitehall Portland Cement Co. was going to be married to somebody, but, after a more careful perusal, it was discovered that the marital relationship would be purely a business union; or, in other words the Whitehall Portland Cement Co. say in their invitation that they had hoped ere this to be able to announce the engagement of the Whitehall Portland Cement Co. to your self.

The union of the party named would be much appreciated by the many friends of both, and the at-home card enclosed, which states that they will be at home in the Land Title Building, and that presents in the shape of valued inquiries for prices will be promptly acknowledged.

We want to congratulate the Whitehall Portland Cement Co. on the unique style of this very catchy advertisement.

The Standard Cement and Repair Co., of Cleveland, Ohio, has been organized with a capital stock of \$25,000.00. The incorporators are: Edward Lawler, Mary Lawler, A. H. Wahl, Anna F. Wahl, L. R. Schwenk and Mary E. Schwenk.

A number of capitalists from the West recently visited Rockmart, Ga., with a view of establishing a large cement plant in that vicinity. It is said that they have an abundance of raw material adapted for the manufacture of Portland cement, and it is possible that a company will be organized in the near future in that city.

The Federal Cement Co., Jersey City, N. J., has been incorporated by Louis B. Dalley, Thomas F. Barrett and L. B. Gunther. Capital stock is \$250,000.00.

The Art Portland Cement Co., Syracuse, Ind., has been organized to manufacture and sell Portland cement, etc. The capital stock is \$500,000.00, and the incorporators are: Geo. W. Miles, Wm. C. Hillabald and Melville H. Smith. The company will manufacture a fine grade of white cement for art building work. The plant will be located at Kimmell, Noble county, Ind.

The Reading Cement Co., of Reading, Pa., which recently went into involuntary bankruptcy, has appointed John M. Frame receiver. The liabilities of the organization are \$39,000.00, and the assets \$17,000.00. The company has 14,000 barrels of cement on hand, which will be sold. The company formerly operated a plant at Mohrsville.

The Indiana Portland Cement Co., of Neodesha, Kan., recently began operations, and have thus far had a very successful run. Indications are for large increase in the demand for their output.

The Kansas City Portland Cement Co., of Kansas City, Mo., has been organized with a capital stock of \$50,000.00. W. Y. Caffay, F. E. Wear and F. C. Downey are the incorporators.

The Alfred Ward Cement Co., of Tiffin, Ohio, has been organized by G. A. Zimmerman, G. A. West, J. W. Leicester and Amelia Zimmerman, with a capital stock of \$115,000.00.

Plaster.

Great Activity at Gypsum Plants.

FORT DODGE, IOWA, December 8.—The State of Iowa has experienced one of the most remarkable autumns in its history and as a consequence all lines of business pertaining to building are enjoying a splendid run of business. Especially is this true of the gypsum business. Manager Pierce, of the United States Gypsum Co., who was recently transferred along with the Western sales office, from Chicago to Fort Dodge, Iowa, reports a splendid volume of business, especially for this time of the year. Mild weather has permitted many projects to be hurried to a stage which will insure their completion before snow flies, and this has kept the gypsum mills running full time.

Since moving the Western sales office to Fort Dodge, Manager Pierce has found it necessary to add several extra clerks and stenographers, and the office force is a criterion to the volume of business which the company found awaiting the removal of the offices to this point.

The Cardiff and Plymouth mills, both independent mills, are enjoying a like proportion of the



SHIPPING FACILITIES OF MANITOBA GYPSUM CO., WINNIPEG.

late fall business which will make the season of idleness much shorter than ordinarily.

Mr. D. E. Roberts, of the Manitoba Gypsum Co., patentee of Roberts Plasterboard, has completed his arrangements for the manufacture of his patent at the Plymouth gypsum mill of Fort Dodge, and the Manitoba Gypsum Mills, of Winnipeg. His plans contemplate the putting on the market of his article for the spring trade, and the encouragement he has received in the way of orders warrants his making his arrangements on a more extensive scale than was first contemplated. The local mill will supply the Western and Eastern trade as well as Southern, while the Northern mill will supply the Northwestern trade. The Northern mill is situated on the shores of a lake which enables them to take advantage of both lake and rail routes in shipping their products.

The Largest in the Country.

A number of extensive improvements are under way at the large plant of the Plymouth Gypsum Co., of Fort Dodge, Iowa. Among these improvements is the installation of another large kettle, which will increase the capacity of the plant to 100 tons per day. This means that the company will have a total daily capacity of 400 tons of the finished product. This kettle makes the Fort Dodge plant the largest gypsum mill in the United States.

The rapid increase in the business of this organization has made this improvement absolutely necessary. The company anticipates an immense demand next spring, and is now prepared to handle this to the best advantage.

IN THE PLASTER DISTRICT.

Operations of the Big Gypsum Plants in and About Grand Rapids, Mich.

GRAND RAPIDS, MICH., November 29.—A representative of ROCK PRODUCTS recently spent a day in this great plaster center. There are probably more high class gypsum mines in and about Grand Rapids than any other place in this country in the same number of square miles. The deposit lies in three distinct stratas, generally speaking, throughout the whole district. The top strata is very rich in calcium sulphate and is that in which the earliest and most of the present operations are carried on, and which has secured the reputation of Grand Rapids as a plaster producing market.

The second stratum which underlies the first with a distinct division between, is never thick enough to work profitably and besides there is usually an element of grit in the rock which increases the expense of working it into finished plaster. The third or lower stratum of gypsum rock, has not yet been found at any place to be so good as the top stratum, but yet it is very much better than any of the second and some very high grade plaster has been made out of rock coming from the third strata, although it is slightly more expensive to mine than the first or top stratum on account of the increasing depth.

Recently it has been definitely determined that under the beautiful city park of Grand Rapids is one of the richest plaster deposits in the whole Grand Rapids district, and active endeavors have been on foot to work it up for the market, but the city fathers have complied with the popular demand that the beautiful spot shall not be disturbed nor undermined as has been suggested.

One of the Big Operations.

At the office of the Grand Rapids Plaster Co. we had a little chat with Mr. Leanhouts, who said they had had a very satisfactory business up to the present time, but that just now the shortage of cars for shipments was interfering with the wheels of progress. This company operates two plants located at the mine three and a half miles north of the city. They calcine a great quantity of gypsum rock and make a specialty of manufacturing that splendid ready-prepared building material known as Sackett's Plaster Board, which is as cheap as lath and offers the finest proposition yet known as a non-conductor of heat and cold.

In the last few years Sackett's plaster board has been successfully introduced in every part of the country, and the builders' supply men who have handled it consider it an easy material upon which to build up a good steady trade. It is attractive for the reason that the board can be applied directly to the studding and does not require any particular skill on the part of the workman to produce a very smooth and attractive finished job. Indeed this patented material has filled a place that was long needed by the plaster trade. It is the oldest concern operating in the district, and they have a very large trade in all parts of the country.

The U. S. Gypsum Co.

The United States Gypsum Co. began operations in the Grand Rapids district a long time ago. One of their extensive mills is located at Granville, a short distance from Grand Rapids, and another is located right close to the city, about a half a mile west from the boundary line. They are enormous miners and producers of gypsum plaster, and have direct connection with branch houses at most of the distributing or great commercial centers. The head offices of this concern are located at 200 Monroe Street, Chicago, Ill., and they carry on extensive operations in the Iowa field as well as other parts of the country where gypsum rock is found in quantities sufficient and of quality that can be profitably manufactured and marketed as plaster material.

One of the most striking exhibits in the Palace of Mines and Metallurgy at the St. Louis Fair, was that of the United States Gypsum Co., representing in detail their operations in all parts of the country. In fact, a World's Fair, as has been developed by the American idea, is a very attractive proposition to all plastering concerns because they are constructed very largely of stucco, and it is said that the construction of the World's Fair at St. Louis created quite a ripple in the demand for gypsum plaster during the year of its construction.

The Exhibit of the United States Gypsum Co. referred to was a representation of the front elevation of an Egyptian temple. The lines were well drawn by an expert architect and the decorations and coloring were exquisite and appropriate and there was no one who visited the Fair who does not remember having been impressed with the appropriate and costly exhibit.

One of the Oldest Concerns.

Out at the new plant of the Alabastine Co. we were kindly received by Mr. J. L. Hamilton, the general manager. This is one of the oldest concerns in the business, and they operate in a line of specialties particularly adapted to interior finish, and as the Michigan Gypsum Co. are very extensive calciners and manufacturers of gypsum plaster. Some of the interior effects produced by the products of the Alabastine Co. have added no little to the beauty both of color and design to modern interiors and at reasonable cost for such a commodity.

The American Plaster Co., of which Mr. Jas. Quinn is the presiding genius, is located immediately on the west side of the Grand river, and their mine extends under the bed of the river itself.

Mr. Quinn has had considerable success in manufacturing a wood fiber plaster of his own composition. In fact, his factory has been running on this specialty almost exclusively during the present year. On June 5th, owing to the high water in the river, the mine of this company became flooded and it was necessary to pump the millions of gallons back into the river after the flood subsided. The mine opening has been secured against future troubles of this kind, for it was a very expensive proposition to pump such a volume of water requiring the constant work of a power pump for five months. Owing to this interruption the American Plaster Co. have been securing their gypsum rock from the Alabastine Co. in carloads.

At the time of our visit, Mr. Quinn exhibited a sample of fine sand, taken from a clay mine which has very peculiar physical and chemical properties not yet fully determined, but Mr. Quinn believes that it is some thing very near to Fuller's earth. In the raw state just as it comes from the mine it will pass a No. 100 screen without leaving any residuum whatever.

A Model Plant.

The Acme Cement Plaster Co., whose head offices for doing business are located at St. Louis, has just completed a new plant located at Beverly, Mich., about six miles from Grand Rapids. Mr. Geo. D. Hyde is superintendent of this plant, and it is equipped in the most modern and up-to-date style. Here they manufacture Acme cement wall plaster and Apex plaster of paris. In a future issue of Rock Products we expect to give a description of this plant in detail as it is a model plant of its kind.

About one mile south of Granville, at which place is located one of the great plants of the United States Gypsum Co., it is rumored that a Mr. Dummer, of Chicago, and associates have secured the old Durham gypsum mill and will rebuild the plant to begin operations next spring. This is the only place in the district where the lime sulphate rock can be secured by operating a quarry proposition and not in the usual way of mining it.

Every concern in the Grand Rapids district report that they have had a good season's business, and the increasing demand for the product can with difficulty be supplied. Truly there are more different things being made from stucco, and the vast increase in the building operations of the country call for plaster upon a larger scale than has ever been known up to the present time.

Immense Operations in Alaska.

TACOMA, WASH., November 29.—The Pacific Coast Gypsum Co. write us saying: "Concerning our plaster mill to be erected at this place, we will take pleasure in giving you an outline of what we are doing here and in Alaska. The Pacific Coast Gypsum Co. is incorporated, or capitalized, for \$300,000.00, for the purpose of manufacturing all gypsum products. The company owns a gypsum mine, located on Chicagoff Island, on the west side of Chatham Straits, about seventy miles west of Juneau, Alaska. The settlement has been named 'Gypsum,' and a petition is in for a post office, which we believe will be granted. Mail addressed there at the present time finds its way readily.

"The stock of the company is practically all owned by Chester Thorne, president National

Bank of Commerce, this city; S. A. Perkins, owner 'Ledger' and 'News,' this city; Richard Vaeth, leading jeweler, this city; A. F. Albertson, vice president National Bank of Commerce, this city, and W. R. Nichols and Geo. Milton Savage, contractors, this city. We are at present engaged in developing the mine at Gypsum, Alaska, consisting of 1,800 feet of wharf, with 1,000 ton capacity bunkers for gypsum rock, on same; one and one-quarter mile of narrow gauge railroad to mine—that being the distance from deep water; 1,500 ton bunkers at mine for storage of rock, from which the rock will be taken to the bunkers on wharf by five ton cars, handled by a locomotive, and dumped therein. From these bunkers it will be put into the hold of the ship by chutes. The gypsum rock will be transported to Tacoma, where we are building a mill for the manufacture of plaster of paris, land plaster, dental plaster, the finer grades of molding plaster, and several brands of hard wall plaster; in fact, all gypsum products.

"We began last May, and figured on getting plaster on the market in one year from that time; and believe we will be manufacturing at that time. This will be a two 10-foot, kettle mill, driven by individual electric motors, about four in number. The building will be 85 x 120 feet, being arranged a little differently from any plaster mill we know of in the country. The general plan of buildings is as follows: The rock will be hoisted from the ship alongside storage bunkers, which will be about 2,000 tons capacity, and from there conveyed to the nipper by conveyors running the entire length of the bunkers. The grinding machine is under the nippers, from which it is elevated to the kettle bins; from the hot pit it is conveyed to the grinding machines, and the entire product will be ground; from there it is elevated to the stock bin, this being about 1,500 tons capacity, and from this bin conveyed to the mixers, which are located near the water. In other words, the rock is taken from the ship and, after passing through the regular course of conveyors and elevators, is delivered back to the sacking bin, which is located near the edge of wharf at deep water, as probably 80 per cent will be shipped by water. We will also have a railroad track alongside of our warehouse, and from there load onto cars, or ship.

"Our market will be the Coast from lower California to and including British Columbia. We have a splendid quality of gypsum rock, and will manufacture the very best goods possible to be made from same. We shall be pleased to send you some photos later on showing our property, with improvements, both in Alaska and here; and will be glad to give you any further information you may desire."

Plaster Company to Operate in Tennessee.

MEMPHIS, TENN., November 28.—Operations are now under way for completing the plant of the Memphis Fiber Plaster Co., which has recently been organized here, with a capital stock of \$30,000.00. The new organization was promoted by C. D. Coddington, of New Castle, Pa., and E. M. Forbes, of this city. The company intends to install the Galley formula for the manufacture of its plaster, the same being used by the Galley Fiber Plaster Co., New Castle, Pa. This plaster is fire and water proof, and can be applied in any kind of weather. A recent meeting of the stockholders was held and the following officers and directors were elected: D. S. Weaver, president; W. R. Johnston, vice president; W. Stober, treasurer, and F. D. Graham, secretary. C. W. Stover, H. C. Partee, C. D. Coddington, W. R. Johnston, E. M. Forbes, W. P. Biggs, D. S. Weaver, J. W. Howard and R. C. Galley are the directors. A site has been selected near Cooper and Central Avenues, and the buildings are well under way. Operations will likely begin about the first of the year.

Will Operate Plaster Plant.

YOUNGSTOWN, OHIO, December 6.—A new plaster plant has been erected here by the Mahoning Builders' Supply Co. The company will engage in the manufacture of hard wall plaster and the output of the plant will be about 100 tons per day. Employment will be given to about twenty skilled workmen, and the company will invest over \$20,000.00 in this new project. It is expected that the plant will be completed in a short time, and operations will begin early in the spring. The officers of the company are: S. B. Clegg, president; J. K. Horne, vice president, and Frank Clingham, secretary, treasurer and manager.

May Manufacture Plaster.

KINGSTON, N. Y., December 1.—It is rumored here that the New York Lime and Cement Co. are soon to begin the manufacture of plaster for building purposes. The reports have it that the new operation will be carried on quite extensively and that these plans will materialize before next spring.

Have Had a Successful Year.

NEW ALBANY, IND., December 8.—The New Albany Wall Plaster Manufacturing Co. have enjoyed a most prosperous year. This plant has only been in operation about one year, and in that time the company has built up a very extensive business. As the demand for its special brands of hard wall plaster has increased continually since it began operations they are well pleased. Their trade has extended in many directions, and they are themselves both pleased and surprised at the volume of business during the first year of their operations. They look forward to an even better demand in the next twelve months, and judging by the past, they will not be disappointed. They have taken particular pains to manufacture the very best wall plaster on the market, and have never deteriorated from this standard, which was their object in organizing the company.

He Knows a Good Thing.

CHESTER, PA., December 11.—Frederick Selby, superintendent of the Keystone Plaster Co., writes us: "As superintendent of a progressive plaster mill I can not afford to be without a copy every month of the 'very best of its kind.' It comes to our office every month, but I do not get the opportunity to devote as much time to reading it as I would like to have; hence, I want a copy for my own personal use, to read at my home after hours. Business is fine and prospects good."

One of the Leading Makes.

One of the leading plaster manufacturing concerns in the East is that of the Connecticut Flexible Plaster Co., at Bridgeport, Conn. This company manufactures the well known brand of Flexible fiber wall plaster, which has found its way to a number of sections of the country, and has always proven popular. This plaster is manufactured along the line of similar wood fiber plasters, but the company makes a special claim for its durability and the increasing number of sales testify to the claims made by the company.

Notable Improvements in Plant.

The Rockford Rock Plaster Co., Rockford, Iowa, has just completed a 50 x 50 addition to their three-story brick plaster factory, making their buildings 125 feet long. The new addition gives increased space for the placing of more machinery and better facilities for handling the large increasing trade of the popular brand of plaster manufactured by this well known concern, who have now been in business for twelve years. They have supplied their rock plaster to many of the finest government, county and city public buildings, in that part of the United States.

The Monarch Plaster Co., of Caledonia, N. Y., which is sinking a shaft near Wheatland, N. Y., has just discovered two veins of excellent gypsum, and are well pleased with the prospect for operations in that section.

The Gypsinite Co., of Newark, N. J., has been incorporated to manufacture, mine and deal in gypsum. The capital stock of the company is \$50,000.00, and the incorporators are Frederick L. Kane and Frederick L. Kane, Jr., of New York, and Cornelius O. Smith, of Newark, N. J.

The Friederang Antique Fresco Co., of New York City, has been incorporated with a capital stock of \$10,000.00. The company will do decorative work, plastering, frescoing, etc. W. Hollister MacMurdo, Morris C. Landan and William Cook are the incorporators.

The Maratime Gypsum Co., Ltd., of New York, N. Y., has been incorporated with a capital stock of \$49,000.00. The incorporators are Robert L. Stevens, Hoboken, N. J.; DeLaguel Haigh, Summit, N. J.; G. W. Newcomb, Neppan, N. S.; George G. Gleason, Bayonne, N. J.

ESTABLISHED

Popularity of Sand-Lime Brick as a Building Material.

The Detroit Convention on Occasion Full of Interest to Every Member of the Progressive Association—Educational Features of Importance Developed.

"THE DEMAND EXCEEDS THE SUPPLY."

DETROIT, MICH., December 7.—The second annual convention of the National Association of Manufacturers of Sand-Lime Products has held a rousing meeting at the Hotel Cadillac in this city for the past three days. The delegates began arriving early on the morning of the 5th, and at 10 o'clock President Squier called the delegates to order in the convention hall of the hotel, suggesting that as the delegates still continued to arrive in great numbers, it would probably be better to hold the first session in the afternoon, giving some of the late arrivals an opportunity to be present. The suggestion seemed to be the sense of the delegates present, so the first session of the convention was ordered at 1:30.

The principal feature of the convention was the great interest displayed by every delegate, for there were two night sessions besides two day sessions each day and the attendance did not fall off to any marked degree at any time. The discussions were lively and a spirit of good will prevailed. In short, it was an educational convention. Every fellow who attended was perfectly willing to give his own experience, and he was there to collect from the experiences of the others valuable information to apply to his own operations.

The lengthy program arranged by the officers did not contain a single number that any of the delegates were willing to miss, and they are to be congratulated upon the splendid array of talent that they succeeded in concentrating to the entertainment and instruction of the body assembled.

One thing became evident as the proceedings of the convention progressed, and that is that enormous progress has been made since the time of the Cincinnati convention one year ago. This splendid building material has been accepted by builders, contractors and architects to a wonderful extent as compared with that recorded at that time.

A number of delegates brought pictures of handsome buildings, including hotels, residences, business blocks and warehouses, that had been constructed of sand-lime brick within the year, and the general expression of the membership was to the effect that sales were dead easy and it is now merely a question of getting the bricks out of the plant fast enough to take care of the demand. This is exactly as was predicted in *Rock Products* one year ago, to wit: That every user of sand-lime brick would become its advertiser, for the material appeals to the practical builder as a profitable, beautiful and substantial building material of the highest grade.

It can be safely said at this time that the sand-lime brick industry of America has passed the experimental stage and has now assumed its place as one of the fixed commodities in building lines. That sand-lime brick is becoming more popular and will continue to grow in the estimation of builders is clearly evidenced by the fact that 60 per cent of the members reported that they had more orders for brick than they were able to supply, and there is hardly a man in the business who is not considering the increase of his facilities in one way or another to take care of the growing demand. Where the brick has been used merely as a faced-brick proposition, either in com-

bination colors or in the natural shade of the product, it has proven very satisfactory and in such cases as the sand-lime product has replaced common clay brick, it has easily proven itself to be a superior material, both as regards beauty and durability.



W. K. SQUIER, PRESIDENT, SYRACUSE, N. Y.

Through all the discussions of the convention the fact was developed that the best minds in the machinery business of this country are bending their efforts and energies to the completing and perfecting of the highest type of machinery for the use of sand-lime brick manufacturers, and the strides they have made within the last year in this direction are gratifying to those who have given encouragement with their patronage.

Another point became apparent in the early sessions of the convention, namely, that the manufacturers, individually and as a whole, have accumulated a great deal of scientific information, particularly pertinent to the industry, and they are in a better position for this reason to accept and apply scientific instruction than they have been in the past. In this direction it is correct to say progress has been accomplished—great progress, of that kind which can be exhibited in plain figures on the balance sheets of the establishment represented by the membership of the association.

A number of members brought samples of brick to exhibit the product of their plants. The C. K. Williams & Co., of Easton, Pa., arranged a case filled with the colored bricks to exploit their coloring materials, and Mr. Sundstrom, of the Sibley Brick Co., exhibited a number of brick that he had made in a commercial way, colored with Williams colors, others colored with Rickatson colors, and a few others, including imported material, which

received no little attention, but, as already stated, the main body of the convention adjourned to the lobby of the hotel there to greet the stream of delegates who were constantly coming in the front door, so that when the hour of 1:30 arrived the attendance was as follows:

ATTENDANCE.

Robt. E. Dolan, Silicated Brick Co., Denver, Colo.; Francis B. Allen, Hartford Steam Boiler Insurance and Inspection Co., Hartford, Conn.; H. O. Duerr, Diamond Stone Brick Co., Wilmington, Del.; J. B. Vandever, Chas. Warner Co., Wilmington, Del.; H. W. Bedell, Platon, Canada; D. B. Bowerman, Toronto, Canada; Jno. Grieve, Hydraulic Brick and Tile Co., Colombo, Ceylon; J. E. McCullough, Atlanta, Ga.; Geo. H. Hartwell, *Clay Record*, Chicago, Ill.; Harry de Joannis, *Brick*, Chicago, Ill.; John J. Moroney, American Sand-Lime Brick Co., Chicago, Ill.; Jno. C. O'Connell, Artesian Stone and Lime Works, Chicago, Ill.; Andrew J. O'Connell, Artesian Stone and Lime Works, Chicago, Ill.; H. S. Simpson, National Brick Machinery Co., Chicago, Ill.; P. L. Simpson, National Brick Machinery Co., Chicago, Ill.; Anton Berg, Anderson, Ind.; W. W. Huffman, American Sand-Lime Brick Co., Anderson, Ind.; W. G. Vanneman, Anderson Foundry and Machine Co., Anderson, Ind.; Geo. T. Butler, Ft. Wayne Pressed Brick Co., Ft. Wayne, Ind.; Theo. A. Randall, *The Clayworker*, Indianapolis, Ind.; Samuel C. Moore, Union Sandstone Brick Co., Lafayette, Ind.; S. W. Bostwick, United States Brick Corporation, Michigan City, Ind.; H. H. Wolff, Diamond Brick Co., Muncie, Ind.; Wm. King, King-Crown Plaster Co., Cedar Rapids, Iowa; E. N. Nagel, Iowa Granite Brick Co., Clinton, Iowa; H. L. Dean, Iowa Building Block Machinery Co., Waterloo, Iowa; Fred K. Irvine, Rock Products, Louisville, Ky.; James Reaney, Jr., American Hydrating Co., Baltimore, Md.; Chas. H. Carpenter, Rep. Hamilton, Ont., Silica Brick Co., Chelsea, Mich.; W. F. Baker, Detroit, Mich. (representing C. K. Williams & Co., Easton, Pa.); Eugene A. Bressler, Michigan Pressed Brick Co., Detroit, Mich.; C. W. Gibson, U. S. Brick Corporation, 28 Pallister Avenue, Detroit, Mich.; David N. Harper, *Concrete*, Detroit, Mich.; H. H. Simpson, Michigan Pressed Brick Co., Detroit, Mich.; W. B. Stevens, *Concrete*, Detroit, Mich.; W. G. Wing (representing C. K. Williams & Co., Detroit, Mich.), Easton, Pa.; Wm. T. Chappell, Flint Sandstone Brick Co., Flint, Mich.; G. W. Straight, Holland Brick Co., Holland, Mich.; G. W. Straight, Jr., Holland Sandstone Brick Co., Holland, Mich.; Jno. L. Jackson, Saginaw Sandstone Brick Co., Saginaw, Mich.; John C. Reinke, Saginaw Limestone Brick Co., Saginaw, Mich.; J. S. Palmer, Sebewaung Sandstone Brick Co., Sebewaung, Mich.; Gustav Reinhold, Sebewaung Sandstone Brick Co., Sebewaung, Mich.; S. T. Hendricks, Sibley Brick Co., Sibley, Mich.; K. J. Sundstrom, Sibley Brick Co., Sibley, Mich.; E. L. Young, Aberdeen Sand Lime Brick Co., Aberdeen, Miss.; A. H. Farrans, Hastings Pressed Brick Co., Hastings, Neb.; G. B. Tyler, Hastings Pressed Brick Co., Hastings, Neb.; A. C. McClellan, Vennor Concrete Co., Atlantic City, N. J.; W. E. Plummer Co., Buffalo Sandstone Brick Co., Buffalo, N. Y.; C. E. Emerick, American Process Co., New York City; A. F. Doyle, H. Huenekes Co., New York City; R. C. Penfield, American Clay Machinery Co., New York City; Prof. Ira H. Woolson, Columbia University, New York City; W. K. Squier, Paragon Plaster Co., Syracuse, N. Y.; W. H. Caskey, Cleveland Car Co., Cleveland, Ohio; H. K. Reader, Ohio Ceramic and Engineering Co., Cleveland, Ohio; S. A. Williams, Jr., Atlas Car and Manufacturing Co., Cleveland, Ohio; Cal. Liggett, Granite Brick Co., Columbus, Ohio; A. E. Kinnon, Dayton, Ohio; H. E. Kendrick, American Hydrating Co., Delaware, Ohio; H. M. Cook, Fremont Pressed Brick and Manufacturing Co., Fremont, Ohio; Geo. Wehring, Fremont Pressed Brick and Manufacturing Co., Fremont, Ohio; Joseph Waggoner, Fremont Pressed Brick and Manufacturing Co., Lindsay, Ohio; L. J. Smith, Milholland Pressed Brick Co., Marion, Ohio; L. W. Penfield, American Clay Machinery Co., Willoughby, Ohio; Robt. F. Wentz, Allentown Silicated Brick Co., Allentown, Pa.; Geo. W. Miltman, C. K. Williams & Co., Easton, Pa.; H. H. Curtze, Globe Iron Works, Erie, Pa.; L. S. Anderson, Genesee Sand-Lime Brick Co., Genesee, Pa.; Arthur D. Shaw, Link Belt Engineering Co., Germantown, Pa.; Richard H. Brodhead, Greenville Silica Sand and Quarry Co., Greenville, Pa.; Geo. B. Cock, Official Stenographer, Philadelphia, Pa.; Samuel Y. Dingee, Henry Disston & Sons, Philadelphia, Pa.; Dr. E. W. Lazell, H. S. Spackman Engineer-

ing Co., Philadelphia, Pa.; H. M. Lippincott, Sand-Lime Brick Co., Philadelphia, Pa.; P. K. Tucker, Sioux Falls Pressed Brick Co., Sioux Falls, S. D.; Fred. W. Cubbins, Memphis Granite Brick Co., Memphis, Tenn.; Bolton Smith, Memphis Granite Brick Co., Memphis, Tenn.; E. G. Buck, Norton Silica Brick Co., Norton, Va.; W. J. Carmichael, American Clay Machinery Co., Wellsburg, W. Va.; A. I. Pick, Pick Brick Co., West Bend, Wis.

OPENING SESSION.—Dec. 5.

Promptly at 1:30 o'clock President Squier took the chair and called the meeting to order as follows:

REPORT OF THE PRESIDENT.

Gentlemen: I have attempted to make my report concise as I trespassed upon your good nature at the beginning of our session and were it not that I desire to conform to by-law 6, and also not to establish a precedent of which future presiding officers might avail themselves, I would ask to be excused.

That the growth of this industry in the United States has been remarkably rapid, you well know, and, while its inception is of foreign birth, if my view of the situation is correct, it is here the ultimate consummation of methods and mechanical appliances will be perfected. Capital and brains are so interested in this enterprise that success must crown their efforts. We can not turn back if we wish to.

Convinced as I am that what takes place chemically under correct conditions will uniformly produce a very perfect and desirable building material, it seems to me what is especially lacking at this time is appliances and devices to enable us to make a better product. This state of affairs will not be arrived at without many failures and the expenditure of considerable time and money.

One of the unsatisfactory features in development is due to the varied conditions at the several plants, and, to use a shop phrase, a "hitchup" that is fairly satisfactory in one place often can not be applied in its entirety to another location.

All things are by comparison, so it will follow that in different sections the standard will not be the same.

Suppose a manufacturer is located where there is little or no call for a face brick and the competition is common clay brick, naturally there is little incentive to try to produce a higher grade product than the necessities of the case demand.

You must keep in mind that only about 5 per cent of all the brick manufacturers are front brick, yet as the market many of us are seeking, is in part or largely a face brick market, the standard required is hard to meet.

It is to be regretted that so much worthless machinery has been unloaded on the manufacturers and so many impractical appliances have been installed and so many plants are badly balanced.

Ought we not demand from the machinery people when making purchases what I will term a blanket guarantee, one that will cover all that it is intended to embrace, not for a short period only, but that can be reasonably considered fair as to time of duration. Also, that a guarantee shall cover wear, horse power, and capacity under normal conditions.

That machines, appliances, and devices must do in general practice what it is claimed they will do, and I would go a step further and demand an indemnity bond that would cover not only the amount of contract, but also loss of time, cost of dismantling and the structural expense that change of appliances might entail. This, I believe would result in fewer fast and loose contracts being made, less junk being dumped on a too susceptible public and would prevent, if followed, ill-advised investments being made, and would check improper competition from people who imperil hard earned dollars on representation that will not materialize.

This inference I make from information that has come to me through various channels.

Some may class me as an iconoclast, but the more quickly we destroy these false idols, the better for the art.

The executive committee was in a degree embarrassed in arranging our program. Some of the gentlemen that we thought would prepare papers positively declined.

We trust no one will feel slighted because he was not invited to contribute. It was found necessary to curtail the addresses and absolutely impracticable to carry out the entire program as originally laid out within the time allotted.

But it is to be hoped that those who were not requested to prepare matter will "make good" when the time for discussion arrives.

Since writing my report, a pamphlet issued by the Government from the Department of the Interior, entitled "Statistics of the Clay-working Industries," was sent me and even at the further risk of tiring you I wish, in the briefest possible manner, to bring to your notice a few salient points of this 1904 year report, because it may enable some of us to obtain a clearer view of the market condition.—*Extract from Government Report.*

The number of clay brick manufactured, as per report was: 8,665,171 M. common, valued at \$51,768,558.00; 434,351 front, valued at \$5,560,131.00, and the total product in round numbers was 9,099,522 M., valued at \$57,328,689.00.

Average lowest price for common, \$4.39 in Kansas.

Average highest price for common, \$8.92 in Wyoming.

Average price for common for whole United States \$5.97 per thousand.

Average price for front for whole United States, \$12.80 per thousand.

The production of the five great brick manufacturing States is as follows:

STATE.	COMMON.	FRONT.
New York	1,169,233 M.	19,104 M.
Illinois	999,310 M.	21,299 M.
Pennsylvania	856,963 M.	75,409 M.
Ohio	455,936 M.	65,645 M.
New Jersey	319,975 M.	47,058 M.



H. O. DUERR, SECRETARY, WILMINGTON, DEL.

The total number of limestone brick increased from 20,860,000 in 1903 to 65,137,000 in 1904.

Mr. Middleton, who compiled the report, said: "The sand-lime brick industry, in the manufacture of which the first plant was erected in this country in 1901, made slow progress until 1904. In 1903 there were only sixteen plants that actually put a product on the market, which was valued at \$155,400.00. In 1904 this number had increased to 57 plants, reporting a product valued at \$463,128.00.

That this method of manufacture of building material is a success and will be a permanent factor in the building industry is hardly to be doubted. It is also equally certain that it will never displace the time-honored burnt-clay brick.

So far the evidence seems to establish the fact that it costs about as much to manufacture sand-lime brick, even under favorable circumstances, as it does to make clay brick under similar circumstances.

"The final test, of course, will be one of durability of the product, and this can only be determined by time. Sand-lime brick will find its greatest use in regions where clay is scarce and sand is

plentiful, as in the case of all new industries, many have embarked in it without proper preparation or experience, and failures are bound to come, but as experience is gained and improvements are made in the method of manipulating the material, the obstacles to success will be overcome and the industry will undoubtedly prosper."

The twelve months intervening from the date of our organization to this convention have brought many disappointments and discouragements, a great deal of real progress, and much upon which we can safely build.

The work of the association has been clearly outlined by our secretary and there is nothing further that I recall of a retrospective nature for me to elaborate.

My recommendations are:

First—That we frown on and discourage all stock jobbing schemes and keep the association as free from the speculative element as possible, seeking to have the membership composed of manufacturers only.

Second—That members of the association when making purchases of machinery and appliances demand a guarantee fashioned on the lines previously stated.

Third—That the most co-operation be given the officers to be elected and that every interest represented especially make it a point to keep the secretary informed of local conditions, and to forward to him any and all information that will be of avail to the association, and to facilitate his work by complying promptly with any proper request for data, photographs, etc.

Fourth—That it is not for our individual or the association's interest to disguise the fact that to manufacture sandstone brick successfully, economically, and well is fraught with many difficulties, and that the margin of profit is not, as has been generally understood, large, and the cost is, as a rule, far greater than the figures that have been promiscuously circulated.

Fifth—That a cost sheet be formulated and printed at the expense of the association for distribution to members that will cover every essential factor and include price of sand, drying, handling, per cent of waste, and expense of removing same; cost of lime, hydrating, handling, and per cent of tailing, number of brick manufactured and kind. Expense of repairs, coal, water, oil, waste, etc.

Subdividing the items so that any and every deduction possible can be made.

The officers and committee men whose counsel has been of great value and whose ready response I duly appreciate, I thank most kindly.

My wish is that the association so well launched may grow and expand with the true commercial spirit.

My hope is that our work may be so clean cut and of such sterling character that it will command the respect, not only of those with whom we are in immediate touch, but that we may attain a position so well poised that statements, bulletins, or any matter promulgated by this body will be accepted as facts by the general public without hesitation or reservation.

I assume the foundation has been well laid and it rests with us what the superstructure will be.

Let us be broad gauged, conservative in our assertions, stating only what we can substantiate, and as generous to our competitors as the necessities of our vocation will permit.

I think we can with advantage avoid customs that prevail at some commercial gatherings and not have our meetings the signal for a general hurrah that has only the semblance of business and, as many of you know, is meaningless and insane.

There is a word, now almost a magic word, made so by the foremost person of the age, that sounds and resounds at every turn in our daily walk, and like the report of a rifle in the mountains, it rings out clear and sharp, echoing and re-echoing from peak to peak—it is *strenuous*. Let us strenuously adhere to clean business methods.

I do not mean to ignore the advantages of the social side of our convocation or to cut or abridge them, and for this reason no sessions have been planned for the evenings. But as business men let us do our business in such a way that in the years to come we shall be able to look back at the National Association of Manufacturers of Sand-Lime Products meetings with pleasure, and be able to account for a substantial profit due to the well directed efforts of this organization.

All of which is respectfully submitted.

This report was greeted with applause. The secretary next called the roll of members, and read a letter of regret from Frank E. Bond. The reading of the minutes of the last meeting were dispensed with because it had already been printed in pamphlet form and was very familiar to all the members. The secretary read his report as follows:

THE SECRETARY'S REPORT.

Much interest in the manufacture of sand-lime brick has been shown by those seeking new fields for the purpose of investing their surplus cash, and their enthusiasm has been materially aided by promoters and exploiters throughout the country.

From two plants in 1906 the industry increased to seventy plants in 1904, and one hundred and thirty plants in 1905. The business at first looks like a fascinating proposition because of its apparent simplicity and the evident ease with which a good material, far better than anything else, can be manufactured at a low cost, with a small investment and unskilled labor.

During the year 1904 a number of men felt that the business had sufficiently progressed to make it desirable for a closer relation between the manufacturers, and through the efforts of our esteemed friend and sympathizer, Mr. Harry De Joannis, editor of *The Brick*, forty-five men met in Cincinnati, on December 5, 1904, and organized this association, beginning with a membership of thirty.

The discussion of papers presented at this meeting, which necessarily had to be impromptu, showed evidence that all were in the midst of an undeveloped period, groping for facts, unestablished, as yet, but which all were most anxious to ascertain. The spirit in which the manufacturers met one another showed conclusively that the time for the association to be formed, was opportune. In the past year the advancement and improvement in this industry has been considerable, not alone in the manufacture of brick, but in the number of plants and in the improvement of machinery. This association has now seventy-six members, most of whom are active manufacturers of sand-lime brick. Although not all the manufacturers are members of this association, yet it is hoped the time is near when they will see the benefits to be derived in co-operation.

During my term of office, as secretary of this association, I have visited about thirty plants. At every plant I have been received with kind consideration and have been frankly met, and our discussions have always been free and open. I find, however, considerable complaint made by various manufacturers that when they have visited a plant they have met with more or less reticence on the part of owners or managers, giving the impression that they had something that they did not wish to disclose. This applies more particularly to a certain system which claims to have secrets which they are afraid others will discover. I shall say right here that I do not believe that, up to date, there is a single secret in the manufacture of sand-lime brick that is worth giving one moment's consideration, and I believe we shall all make greater headway and produce greater development by being perfectly free and open with each other than by attempting to withhold any supposed secrets.

I am informed that one of the so-called systems even claimed that the association was formed for the purpose of discovering their secret. All I have to say to such statements is that the only secrets such gentlemen can have, which in fact is no secret, and that is that they are imposing upon the good nature of the men whom they are trying to hoodwink.

I trust that the free and open manner in which this association was started will be continued.

I have communicated with every sand-lime brick concern in this country, some in Canada, one in each of the following countries: Newfoundland, Scotland, England, Germany, Switzerland, South Africa and Ceylon. I have been in correspondence with every class of manufacturer of machinery that in any way could interest sand-lime brick men and have investigated, as carefully as my time and means would permit, many kinds of machines. I have received nearly 3,000 letters and have written many more. I have heard the good fortune of some of our fellow manufacturers and the "tales of woe" of a great many more. Last year when we met, the feeling of all seemed to be "What is necessary to do in order to get the public to accept sand-lime brick?" One of the suggestions made was to have the association pub-

lish a pamphlet setting forth the facts concerning sand-lime brick as we understood them, and as investigations and tests has demonstrated them. I was instructed to undertake this task, after three months of search and research, and by the aid of many of the members, I succeeded in compiling the pamphlet of which 10,000 have been distributed in this country and abroad. That the pamphlet was a happy thought on the part of the gentleman who suggested it, is without question, as in many instances, which have been brought to my notice, contracts were given on the strength of information furnished by this pamphlet. I think, however, that conditions have somewhat changed. While a year ago we were anxious, for fear we might not have a ready sale for our bricks, to-day we know that we can sell all that we can make and our present difficulty is not now to sell bricks, but how to make them, and when I say make them, I mean make them profitably. Of the thirty plants, which I have visited, I have seen but three in operation. This has not been my experience alone, but that of nearly every one. Many with whom I have conferred have stated that they have been to see such and such plants, and when I have asked them how they were running, the reply was that they were not running that day, or that week. This can be due to but two things in the long run, viz: faulty construction and imperfect machinery. Inexperience in operating at first has something no doubt, to do with it. It is the same old story of being induced to go into a thing which is entirely out of our line. Nothing can succeed without a practical man at the head. I am also sorry to say, that in many



IRA H. WOOLSON, NEW YORK, N. Y.

cases where plants have been put in by certain so-called systems, after the plants have been erected, the promoters have apparently lost interest and have done nothing to aid the purchaser in overcoming his troubles. This is unquestionably a very short-sighted policy on their part. I would caution all the members of this association against purchasing any machine that has not already been thoroughly tried, or if new machinery is put upon the market, about which you know nothing, I would, under no considerations, accept it, save on a trial of reasonable time. For some classes of machines one month is ample, for others six months is not enough. Nearly all machines will work well the first few weeks, but soon they begin to show defects and these defects can only be found out after operating the machine in the regular routine or running the plant.

If you have machinery and a plant which will enable you to get a regular steady output, you can make money. If you do not have this, it is a losing game. I figure that if a plant can turn out each and every day 15,000 bricks, that they can produce those bricks at a cost of \$4.00 per 1,000, but for each thousand bricks under that, the cost increases 15 cents per 1,000. In other words, if you make but 10,000 bricks your cost will be \$4.75 instead of \$4.00. As the output depends upon the number of bricks turned out by the press men, I have found it advisable to put these men on piece work and pay them such a price as will enable them to make good wages.

The making of sand-lime brick is not a simple

promoting proposition, nor is it, as we have been lead to believe, simply necessary to have a pile of sand, purchase a little lime, hire a few common laborers, sit in the office and draw in the dividends, but it is, in every sense of the word strictly a manufacturing and business proposition, and one requiring careful attention to every detail, best of management, a well organized force and the best machinery that money can buy. I shall venture to say that there is not one sand-lime brick plant in this country that will make a great financial success under its present conditions. In other words, I do not believe that there is a single plant that will not have to be remodeled before it can be made a profitable business. I do not hesitate to state that my inexperience has cost me a great deal, but it is hard to make a newcomer recognize the many difficulties. In many cases, men have come to me for advice as to what they should do before putting up a plant.

I have advised them honestly and sincerely, that is, I have advised them not to go into the business unless they were practical manufacturers themselves, or had some practical man associated with them, and not then, if their locations and conditions were not most favorable, but rather to wait a few years as the business was still in the experimental stage, and a few years would do much towards the development and perfection of the methods and machinery. I know of several cases where plants have been put up for which there was no possible rhyme or reason. The materials were expensive, labor high, and there was practically no market. I have seen other plants built, the defects of which were without excuse, and it was evidently put up to get your money with no thought for your future success. With these conditions existing, is it a wonder that there are many tales of woe? I do not wish you to understand or feel that I am a pessimist on the sand-lime brick future. On the contrary, I am more enthusiastic, if possible, than ever, because I feel that the work which we are doing together, the efforts which we have been making to overcome our difficulties, the apparent desire on the part of machinery men to study the situation and determine the weaknesses of their machines and to make improvements as rapidly as they can see their way clear to do so, has made me feel that the prospect of the sand-lime brick business, in this country, is better than in any other part of the world. The progress in the development of machinery has been very great, but there is still room for far greater improvement, particularly so, in the method of treating our lime in the presses.

The work accomplished by this association since December, 1904, has been varied and of direct interest to the individual manufacturer. The pamphlets were evidently acceptable as the edition of 10,000 was exhausted some months ago. The next effort was missionary work done by members of this association in inducing the larger cities to adopt specifications, permitting the use of sand-lime brick in their respective jurisdictions and standardizing the materials. I have made repeated trips to New York, Philadelphia, Baltimore and Washington for the purpose of having our bricks standardized, have called upon the chief of various government departments at Washington. When I first started on this crusade, I was very much surprised to find that the United States government, as well as the leading citizens of the country, had no specification of requirement for building materials, particularly brick. All the requirement usually made was good, hard burned brick, which may mean anything, depending wholly upon the judgment of the individual in charge. This is still the case in a great many places, but other cities will soon, no doubt, follow in the lead of New York and Philadelphia, issuing specifications which will be without prejudice, and which will place sand-lime brick in every case on a par, at least with clay brick; and all that will be necessary is for the manufacturers of sand-lime brick to make their bricks come up to requirements of these specifications which they should have no difficulty in meeting. Our difficulties, as stated before, are not those of the salesman but rather those of the manufacturer.

Another work of vital interest to the plants of the country was that of starting an investigation as to insurance rates. In the beginning, sand-lime brick plants were more or less confounded with clay bricks plants and were rated accordingly. I think, however, that the efforts of the association in this respect will soon be recognized and that we shall find the underwriters more reasonable and equitable in their ratings, particularly so, if we follow out their suggestions. In line with this action, the underwriters of Philadelphia have been

kind enough to designate Mr. A. G. Patton to investigate sand-lime brick plants, and together we have visited a number of plants. The result of his investigations, you will receive later in a paper which he has kindly agreed to present. Mr. Patton will make such suggestions to you as will enable you to overcome any extraordinary risks which might otherwise possibly be encountered in your plant.

Also, in connection with this subject of risks about a plant, I wish to state that Mr. Allen, vice president of the Hartford Steam Boiler Inspection and Insurance Co. will give us a talk on the proper construction of hardening cylinders. Mr. Allen is eminently fitted to do this as his company has had large experience in the inspection of cylinders used for vulcanizing and other purposes, and he has made a special study, at the request of the association, during the past year, of hardening cylinders for sand-lime brick plants. An important part of our plant, and a part which we have no right to neglect in any respect is that of carrying steam at high pressure. It is a very dangerous operation under the very best of conditions. We shall all be benefited by Mr. Allen's kind attention in this matter. Mr. Allen has given considerable of his time during the past year in going over and discussing the various weak points, and the accidents which might arise in the use of hardening cylinders. He has visited many plants, so that he has seen the conditions and watched carefully the operation and action of the hardening cylinders.

The correspondence of the association has been the greatest labor that the secretary has undertaken. It has, I trust, been of assistance in many instances. This gathering of facts from the various plants and distributing of them to those in need has helped in forming many trustworthy conclusions. I wish to thank the members for the support which they have given me in the past year, and while at times I have been somewhat discouraged in my efforts, for I have written a great many letters and sent out considerable information without so much as receiving an acknowledgment in many cases. It is generally understood that courtesy in business is a waste of time, so that I have taken consolation by being thankful for the assistance that I did receive, and when the man who fails to answer some inquiry which I made because I regarded it of enough importance to make, awoke and found that he wanted something, I did not hesitate to give it to him, if the information he desired was at my command. The success of any institution always depends upon the interest and energy of some one in that institution, and that interest and energy is wholly dependent upon the moral support he receives from the other members of the institution. This applies to all business associations and in all conditions of life, and necessarily applies to an association of our kind. I have had a great many letters from those who were not members of the association which I have had to refuse to answer because I did not think the association had been formed for the purpose of promoting sand-lime brick plants or assisting promoters.

During the year frequent rumors have been brought to my attention to the effect that sand-lime bricks have been condemned in various building operations in different parts of the country because of disintegration. These rumors have been carefully followed up and in no case have I found them to be true, nor have I found any foundation for them. They have doubtless been a fabrication of anxious competitors.

The plants that I have visited represent every known system in this country, and while I am persuaded that good bricks can be made under each one of the systems, I am impressed with the fact that no plant is equipped with machinery that will provide a maximum output continuously, and consequently, the results in none of these plants have been what was expected. Instead of bricks being made at \$3.00 a thousand they have more often cost \$8.00. Here are problems for the scientists and machinery men. I find the science of sand-lime brick is one which we apparently know very little about, and one which we can profitably spend a great deal of time. Unfortunately, however, for the most of us, experimenting takes time and money. I feel that it would be a decided advantage to this association if we could afford to devote some money to this purpose. It is not fair that a few should do the work for all the rest. I do not propose, in this report, to go into any details of experiments or discoveries that have been made in the past years, and improvements that have been brought out, as there are a number of

papers to follow which will treat upon the various subjects in a more complete form than I would be able to do, and the discussions which will, no doubt follow, will give us all ample opportunity to bring out the questions of doubt which are in our own minds. Accompanying this paper, I shall furnish you with a table of results of some of the experiments which in the past year I have made with the valuable assistance of Dr. Lazell, of Spackman Engineering Co., which will, no doubt, be of considerable interest to you. The sum and substance of our experimental work in the past has made me come to the conclusion that for the best results in sand-lime brick, we should have a fairly clean, sharp sand high in silica. All sand should be dried and 10 per cent of it, at least, should contain 100 mesh of finer sand. The lime should be a high-calcium oxide, fairly free from magnesia and properly burned. It should be well prepared and aged. The mixture should be uniform in consistency when delivered to the press.

I believe the time has come when we can and ought to emulate our friends across the sea and form an association like the German association, and that this association should stand for something, not alone for the purpose of helping its members, but also for the purpose of helping the building fraternity at large, the cities, the architects and the contractors. We should stand for the best and I believe that we should make one of



DR. E. W. LAZELL, PHILADELPHIA, PA.

the requisites of membership in this association a certain standard of manufacture of brick. What this standard should be is open for discussion, but when once fixed, each member of the association should be required to put brick upon the market which should come up to the standard; and a membership in the association should be sufficient guarantee for good material, so that when a man goes to an architect or a contractor, or an engineer, to sell him bricks, all he needs to say is: "I am a member of the association." Nothing will do more to establish confidence with the public. Nothing will do more to help the investor in sand-lime brick plants, for when he makes a contract with the promoters of machinery to put up a plant, he can specify that the plant should be capable of making brick which shall come up to the requirements of the association.

I have a number of letters from some of our foreign correspondents which I shall read to you. They will give you some knowledge of the condition of sand-lime brick in other countries. You will note that we are all peculiarly in sympathy with one another. I think we have all been benefited by reason of the formation of this association and that it is well for us to make every effort to continue it, and each year to take a step forward. I am well aware of the fact that none of us feel exuberant over the results of our experiences up to date, from a financial standpoint, but could we have expected any different results if we had not been carried away by the eloquence of those who persuaded us that it was a sure winner without any effort on our part? There are very

few manufacturing industries that can show a dividend under two or three years. When you appreciate that this is an entirely new industry, with undeveloped conditions, undeveloped machinery, and that out of 130 plants now in existence, but three have failed, three more have practically gone out of business, and one had been burned down, the record is not bad. Of those who are in the business, no doubt, some will have to fall by the wayside, but there is not one of them, if they will go at it intelligently and do that which is necessary to overcome the difficulties, but will be the winner in the long run, and be eminently satisfied with the results. We have had some good work done in scientific lines.

Prof. Woolson, of Columbia University, and a recognized authority in this country on building material, had been studying for some time the properties of sand-lime brick. It was with enthusiasm that he entered into the work of making extensive tests for this association, the report of which he will give us in his paper. The machinery people are rapidly grasping the situation and making every effort to get to the front with machinery of suitable kind. My own feeling is that the machinery question, other than the presses, is a perfectly simple one and has now little or no difficulties. The men who are going to give us the presses in the future are the men whom we want to stand by and help in every way possible. We are practically in the same position that the cement people found themselves when they began the industry, and as far as that is concerned, in the position of all manufacturing industries undertaking an entirely new line. The early cement plants were practically rebuilt two or three times before they were placed on their present basis, and it was some years before the result of this country's work produced men of sufficient experience and ability to build plants which would be regarded as success.

The association has been criticised in one or two instances for giving so much space on the program to the machinery men. The criticism being that we were advertising machinery rather than the sand-lime brick. This is not a fair criticism. We must have machinery, in order to have bricks, and if we would have good bricks we can not investigate the machinery too carefully.

This association should stand for conservatism in every respect and I believe our membership should be cut down to manufacturers only, and an honorary membership of such scientific men as are interested in the welfare of sand-lime brick and who would naturally add to its future development, also the trades papers and technical journals that are interested in sciences and the promoting of brick among builders and architects. In return for their membership, the association should be entitled to an annual subscription of their periodicals. There seems to be a misunderstanding on the part of the public as to the purpose of the association, and some men seem to think, if they send in an application for a membership and accompany it with \$10.00 that they are entitled to professional services which will enable them to promote a sand-lime brick plant by the free use of the name of the association and the information which they can obtain. I trust that this meeting will be rich in discussions and suggestions that bear upon the furthering of our common interests. We need energy, practical thought, scientific research, mechanical skill, generosity in spirit and united efforts to develop our industry. I wish to thank our esteemed president and the other officers for their hearty support; and I trust that one and all will come again to our next meeting with a feeling that we have no regrets and nothing but pleasure, because in the introduction of sand-lime brick into this country.

This able text for the whole subject of the convention was received with the thanks of the association and brought a good deal of talk up on the subjects of The Development of Machinery, The Practice of Testing Lime as well as the suggestions with regard to Standardizing the Sand-Lime Brick for Practical purposes.

The report of Treasurer Wm. King was received, which gave all the disbursements in detail. Then a letter was read from the secretary of the German Sand-Lime Brick Association at Cnar-lottenburg extending the greeting of the brethren in that country to this association.

A letter from Scotland was read, coming from Messrs. Robt. Brown & Sons, of Perth, containing words of greeting and hearty encouragement.

Mr. Smith, of Memphis, told of the employment of Prof. Ira Woolson, of Columbia University for the purpose of making systematic and scientific tests of sand-lime brick which will be mentioned

later on in connection with Prof. Woolson's paper, and he suggested that an assessment of \$30.00 to defray this as well as the printing bill and all other expenses of the association be entertained. After a little discussion this motion was carried.

Under the head of "New Business" Mr. L. S. Anderson explained the progress made by the insurance committee, saying that the boards of underwriters in various localities insist on classifying a sand-lime brick plant under the same basis as a clay brick concern, and asked that a committee be appointed to work the matter out so as to get a more favorable classification for insurance.

Mr. Brandon moved that a cablegram of greeting and good will will be sent to the German Association, which was carried unanimously. Then the president appointed Messrs. Bolton Smith, Strait and McClellan to act as a nominating committee for the purpose of nominating officers for the ensuing year.

Mr. W. J. Carmichael, who had but recently returned from the City of Mexico, where he has successfully started a new plant, read his paper entitled, "The Characteristics of a good Sand, Its Production and Proper Preparation." Mr. Carmichael was exceptionally well prepared, having had a wide experience with different sands in a number of localities, and these he described at some length, giving their physical nature and classification and stating the best methods of grinding and pulverizing in each instance. The successful drying of the sand was made a feature of the first requirement, and the discussion brought out a great deal of instructive matter, so it is safe to say that the educational feature of this paper was not without a wholesome result in any case.

Departing from the order of the program, the president next called on Mr. G. W. Mitman, of Easton, Pa., for his paper upon the subject of "Coloring Matter for Sand-Lime Brick." Mr. Mitman is a man of practical experience in the handling of coloring matter. He stated emphatically that the sand, lime and coloring material should be thoroughly mixed and ground together in the dry state. He took up each color that is of interest to the industry in detail, and told of the development of that color by the use of pure minerals only. He advised that it was necessary in each particular case and with each several kind or quality of sand to take up the matter with a competent chemist, so as to determine the exact ingredients and provide for the local conditions. The discussion which followed this paper was participated in by nearly every member in attendance, and while there were a number of views presented Mr. Mitman's original idea was concurred in to a great extent.

Mr. P. L. Simpson, of the National Brick Machinery Co., Chicago, Ill., next presented his paper upon the subject of "The Rotary Press." Over on the exhibit table Mr. Simpson has several pictures of his new machine which has been especially designed for the use of the sand-lime industry. In his paper, he brought out in the manner of a practical mechanic of experience, that it was necessary to have the pressure from both the top and the bottom of the mold at the same time in order to get the best results from such material as the sand-lime proposition. He mentioned the difficulty of dwelling on the pressed brick, and told of his experiences in the experimental stages of the machine. At the close of Mr. Simpson's paper, the session resolved itself into a committee of the whole for the purpose of jumping into a discussion of the press—that vital machine right in the middle of operations. It was difficult for the official stenographer and the president to keep the discussion straightened out, for some times there were two or even three talking at the same time, but anyhow there was plenty of press education to be had, and it is our opinion that every fellow got some.

On account of dispensing with the morning session, on motion it was decided to hold a night session, so the convention adjourned until after supper.

The president called the night session to order a few minutes after 7:30, and with a graceful little speech introduced Dr. E. W. Lazell, of Philadelphia. Dr. Lazell had just returned from far off Washington, and stated that he had not had sufficient time to prepare such a paper as he would like to have for such an occasion, but as the subject given him was one on which he was more or less familiar he would give out the best he had off hand. This is what Dr. Lazell said, but in reality he is always in touch with the subject which was entitled, "Lime and Its Relation to Sand-Lime Products." In fact, the Doctor

was full of good things, and there is no telling when that night session would have adjourned had he made any special preparation for it. He kept in good humor throughout the long discussion that followed his paper, he being called and recalled to repeat and review various parts, which will be printed in full in the official proceedings that goes to the members only. By the use of a diagram, he explained the derivation of sand, classifying the various kinds that the practical men have come in contact with, and spoke of their various merits. He then took up the subject of lime and carefully explained the exact chemical change which takes place to produce the combination of calcium and silica that makes the sand-lime brick. He stated that in his opinion the best results could be obtained by employing two sizes of sand, one very much finer than the other, so as to create by the process of intermixing much smaller interstices than would occur when all the sand is of the same size particles, and stated that all his experiments and practical research had been conducted with bricks which were made from a thoroughly hydrated very high calcium lime, and he was inclined to believe that the use of dolomite or magnesia limes were to be avoided, if for no other reason on account of the difficulty in properly hydrating them.

The convention used Dr. Lazell as if he were a school-teacher, making him run a gantlet of questions from every part of the house, and it must be said for him that there was not a question asked for which he did not promptly have a good, complete and correct reply. This paper and its discussion consumed the whole of the night session, and about 9:30, after passing a rising vote of thanks to Dr. Lazell, the session adjourned.

MORNING SESSION—Dec. 6.

Wednesday morning the convention was called to order promptly at 10 o'clock by President Squier, who stated that he considered the best thing for the convention to do was to adhere to the program as near as possible, although they would have to depart from its sequence on account of the engagements of some of the gentlemen having papers.

The secretary read a letter of regret from Mr. W. P. Garth, of St. Louis, who submitted his paper through the secretary upon the subject of "The Vertical Press." As soon as the secretary had finished reading the paper several members took up the subject of the paper and a discussion upon the trembling of the press at the time of the action of the charging apparatus, as developed in the operation of such a machine, and an opinion was reached that it was desirable to have interchangeable wearing parts in the press to take care of this undesirable feature.

Next Mr. L. W. Penfield, of The American Clay Working Machinery Co., Willoughby, Ohio, delivered an extemporaneous talk upon the subject of "The Vertical Press," and he insisted that his remarks should not go upon record, as he had not had the time to prepare the paper as it should have been done as requested by the secretary. Mr. Penfield began his remarks by stating that he kept such engagements by working at night or on Sundays, but that in the past three months there had been neither nights nor Sundays among his engagements for such a purpose. He told how the leading machine makers of the country had come to realize that a machine had to be constructed especially adaptable to the sand-lime brick industry, and showed that all the previous existing machines for one reason or another were not in line, and were objectionable from some standpoint. He explained that such a machine could only be developed slowly by continued experiments and constant trials, the peculiar trouble which presented itself in this case has been the hardness of sand. The conclusion of his talk was that the proper perfecting of the press, as well as some of the other machines for the purposes of the sand-lime brick manufacturer, was a mutual matter between the machine builders and the operators of the various plants.

Mr. K. G. Sandstrom, of the Sibley Brick Co., Sibley, Mich., read his paper upon the subject of "Coloring Brick." Mr. Sibley has had considerable experience, and not a little success in producing a fine red color in his brick. In fact, the Sibley Brick Co. have had a greater success with their colored brick than any of the other members present, and they have been able to get a bet-

thousand extra being easily obtained. Mr. Sandstrom explained that they had not completed their experiments, but at the present time were extensively carrying on investigations in green, buff and gray, having about finished with the red brick proposition. The great difficulty in coloring sand-lime brick is in getting coloring material which is lime and steam proof. Careful laboratory work alone can determine the formula for each case with any given local sand condition. In all the experiments that he cited, he had used a lower price for their product as colored material than with the natural color—at least \$3.00 per very high calcium hydrate.

Mr. Jackson, of Saginaw, Mich., said he had a great deal of experience at several of his plants in attempting to color brick, and said he could answer that red, buff and gray bricks would fade in every case, unless the lime that was used in their manufacture was properly hydrated.

Adjourned to 2 p. m.

AFTERNOON SESSION—Dec. 6.

Mr. Wm. King, treasurer of the association and president of the King Crown Plaster Co., Cedar Rapids, Iowa, presented his paper entitled "Sand-Lime Blocks and Appliances for Making Same." Mr. King has had considerable experience in producing building blocks for belt courses, window caps, door lintels and sectional pillars, using the regular sand and lime mixture and hardening the product in the regular way in his hardening cylinder. Mr. King had several building blocks on exhibition which he had made on a hand tamp concrete block machine, and a hollow section of a round cylinder which he had made by using the section of a stove pipe for a mold. Besides these he had an attractive proposition made of the sand-lime mix of a half measure block suitable for the veneering of foundations. Mr. King remarked at some length on the extreme cheapness of such building blocks where the sand is to be had at a reasonable figure.

Mr. J. A. Reaney, Jr., of The American Hydrating Co., Baltimore, Md., read a paper entitled, "The Best Method for Preparing Lime for Sand-Lime Brick." Mr. Reaney is a mechanical engineer of successful experience, he having perfected a system of machinery for the purpose of hydrating lime. He went into the hydrating proposition with a great deal of skill and explained the reasons for his opinion that magnesian limes are not good for hydrating purposes, because they will not pulverize promptly or properly. High calcium lime on the other hand does pulverize and hydrate to perfection. Mr. Reaney showed the advantages of hydrating the lime upon a large scale, and continuously when it was practical to put such a plant in operation. Mr. Reaney stated that high calcium limes alone possess the necessary cementing qualifications for use in the manufacture of sand-lime brick.

A free for all discussion took place at the close of Mr. Reaney's paper, in which it was developed that wherever it is possible to have a staff chemist at the plant, a sample from every car of lime received should be carefully analyzed, as that is the only correct way for the manufacturer to tell what he is getting for his money. When it came to the selection of the sample it was recommended to take small portions from as many parts of the car as possible, and by combining all these to treat it as the sample of the car. Mr. Duerr explained that an analysis of one car of lime would be no criterion for another car from the same quarry and the same kiln, as the rock from which the lime is made might come from a different ledge in another part of the quarry, or from a new opening in the same neighborhood, and the two analyses might show a wonderful difference for this reason.

Mr. Simpson stated that he knew of parties in Wisconsin who had succeeded in thoroughly hydrating their dolomite lime and using it in the manufacture of brick, of which they enjoyed a very large and successful sale. As a result of the whole discussion a good many new ideas were brought out with regard to the proper preparation of the lime for the original mixture in manufacturing sand-lime brick.

Mr. Duerr, the secretary, read a paper from Prof. S. V. Peppel, entitled, "The Scientist's Message to the Sand-Lime Brick Industry." In his paper Mr. Peppel reviewed the industry from the first experiments in this country down to the present time. He carefully went into the difficulties which first presented themselves, and which

in a large measure have been successfully overcome. Mr. Peppel advised that what he considered a drawback at the present time was the hesitancy on the part of some of the manufacturers as to the advisability of accumulating a large supply of brick during the dull season. He spoke of the intrinsic excellencies and adaptability of sand-lime brick for the building trade, and stated that he believed it would be easy to sell much larger quantities of brick if the contractor could be assured that he could have the brick delivered as fast as required, and not place the active building operation in the position of waiting for the material to be turned out before the job could be completed. Mr. Peppel's suggestions in this regard was concurred in by most of the members in the brief discussion that followed.

Mr. S. Y. Dingee, of Henry Disstons & Sons, Philadelphia, Penn., next read his paper on the subject of "Liners." Mr. Dingee went into this subject in such manner as to show that he was familiar with the requirements of the sand-lime brick press. In such cases where it was possible he recommended the use of thin liners. He told of the extreme difficulty in tempering the steel from which the liners are made, and showed that regular saw plate would not be hard enough nor tough enough for such a purpose, as the sand cuts them out very rapidly. He dwelt upon the importance of having the liners all that they should be, in order that the manufacturer could keep the output of his press uniform and continually making first class brick, worthy of being called a face brick commodity. He stated that his firm had been making a special grade of steel for the Government for use in torpedo tubes, and that this they were using for their liner material at the present time. He finished his argument with an appeal to the press makers to co-operate with him in his efforts to attain the highest results with liners.

Mr. Olcott Payne, of the Peerless Brick Co., New York City, was next on the program with a paper entitled, "The Kent Mill." Mr. Payne was not present, and the secretary took it on himself to announce by the way of explanation that Mr. Payne had just bought a new press (laughter). Everybody was satisfied with the explanation.

Mr. W. C. White, of Cumberland, Md., who was next on the program with a paper entitled, "The Tube Mill," was also absent at the roll call, but at the suggestion of the secretary, the president invited the members to hold an experience meeting on this subject, and called on Mr. Nagel, who said that his tube mill had given them a little trouble at first, but that now it was running in a very satisfactory manner.

Mr. Straight, of Holland, Mich., said that he employed his tube mill for mixing purposes exclusively, and that he had found it very satisfactory in every particular. Mr. Carmichael thought that the tube mill was entirely too expensive to be considered a mixing proposition only. Mr. Wentz, who has had a great deal of experience with the tube mill as applied to the manufacture of Portland cement, stated that the tube mill was considered the limit of excellence where fine grinding was to be obtained, but that the grinding produced by a tube mill was not to be considered as uniform unless it was screened at the outlet, and the coarser material deflected back into the tube mill for regrinding. Mr. Wentz further stated that a new method of loading the tube with pebbles was being successfully developed at the present time. In place of having the tube half filled with pebbles, the new system almost fills the tube so that in one revolution there is considerably more grinding going on in the interior of the tube, and Mr. Wentz explained the difference between the office of the ball mill, and the tube mill. Mr. Bolton Smith, of Memphis, who operates a tube mill at his plant, convulsed the convention by stating that the tube mill full of pebbles and the ball mill full of balls was very clear to him. Mr. Grieve, of Ceylon, stated that he used both a ball and a tube mill. Mr. Smith replied that it was clear that a ball mill has a tube and a tube mill has balls. At the close of the discussion Mr. Grieve arose and stated that what he had after all was a ball mill.

As the hour was getting late, on motion, it was decided to hold another night session, so adjournment was made until after supper.

EVENING SESSION—Dec. 6.

The meeting was called to order promptly at 7:30 o'clock, and Mr. J. L. Jackson, of Saginaw, Mich., took up the subject of "The Rotary Press," giving his experiences in his preliminary travels of investigation before he entered the business, and the results in his own plants in the country.

The secretary read an interesting paper from Mr. F. B. Allen, Hartford, Conn., upon the subject of "Hardening Cylinders." The paper took up the specifications in a very scientific manner, and was illustrated with a number of blue prints, showing all the various working parts and the assembled hardening cylinder as a whole. The hardening cylinder is one of the most important as well as the most expensive pieces of machinery in the whole operation, and this paper provoked no little comment and discussion. The amount of pressure that the cylinder could stand, and the amount of pressure required for the satisfactory production of the sand-lime brick was taken up. Messrs. Grieve, Brodhead, Smith, Duerr and Dolan getting into the discussion.

Mr. Arthur D. Shaw, of Philadelphia, Penn., presented his paper upon the subject of "Measuring Devices." He had a stereopticon, and besides showing a number of views giving the most desirable manner of getting mixtures of sand and lime into intimate mix, showed several views of the "Trump" concrete measuring and mixing machine, which operates in such a way as to mix the sand and lime continuously by means of two cylinders, one contained inside of the other revolving over a fixed table which is circular in form and provided with a finger to draw out the material in a steady stream at one outlet opening. Mr. Shaw was thoroughly acquainted with his subject, and had every part of his machine at his fingers ends.

This completed the evening session, as some of the members wanted to attend the theatre.

MORNING SESSION—Dec. 7.

President Squier called the convention to order at 9:30 Thursday morning, and Secretary Duerr arose and insisted on the members attending to the validation of their tickets.

Neither Mr. Carlette or Mr. Curtin who were on the program under the subject of "Dryers," were present, the secretary read a letter from Mr. Tuska, of The American Process Co., upon that subject, and then the president threw the subject open for discussion of the assembly. Mr. Grieve who had the floor very frequently had something to say on this subject, and, in fact, every member seemed to have a different view, but the whole matter was well summed up by Mr. Carmichael, who said there is no more important subject in the whole manufacture of sand-lime brick than the proper drying of the sand, because upon this depends in a large measure the quantity of the grinding, and in reality the output of the factory is determined at this early stage of the operation.

Prof. Ira Woolson's paper upon the "Standardizing of Sand-Lime Brick," was one of the great features of the convention and was the result of very expensive and elaborate experiments conducted by Prof. Woolson and his staff at Columbia University. Prof. Woolson had received a number of sand-lime brick from several of the leading manufacturers, and an equal number of common clay brick beside another lot of Philadelphia face brick made from clay. Prof. Woolson had built an experiment house, constructing the walls of sand-lime brick and the two kinds of clay brick, all being arranged in such a way that it could be converted into a furnace, and this was fired and the experiment of a fire and absorption test carried out in all its minutia. Every brick had been subjected to the same testing machine for tensile, for crushing and for transverse strength. He had a large number of photographs to illustrate his paper, besides blue prints and exhibits of the bricks themselves after being tested to destruction under the various topics. The absorption and fire test was especially interesting to all the manufacturers, and the experiments as conducted by Prof. Woolson gave encouragement to a great many of the members who were in doubt as to the exact status of the material which they produced.

Prof. Woolson stated that he did not believe there could be much importance attached to the test of a laboratory brick. The commercial product is what should be tested in every case, for that is

what the builder will be supposed to consider, and the wide difference in the results of testing might be explained from the fact that some of these bricks were made under very different conditions from others. He dwelt on some length upon importance of standardizing the tests in such a manner as could be obtained from a testing station that would be the property of the association, where all the material offered for testing would come to the same machine, to the same kiln for fire and absorptive tests, so that every test would be comparative with every other. He suggested that it would be a good thing for this association to appoint a committee to co-operate with the American Society for Testing Materials, with which he was intimately associated.

This suggestion of Prof. Woolson met with the approval of the association and President Squier appointed Messrs. Jackson, B. Smith, Anderson, Penfield and Hendricks as the committee, and Prof. Woolson as an advisory member to meet immediately after adjournment.

The members of one accord crowded around the pictures and drawings and the convention stood adjourned until the afternoon. The full text of Prof. Woolson's paper containing illustrations will appear in the official proceedings which are issued by the association to members only.

AFTERNOON SESSION—Dec. 7.

The closing session of the convention was called to order promptly at 2 o'clock by President Squier on Thursday afternoon. In the absence of Mr. James Curran, of Bakersville, Cal., Secretary Duerr read his paper upon the subject of "The Cost of Sand-Lime Brick." Mr. Curran stated that out in California they had so organized their operations that every part of the manufacture was produced under the piece system, and that every part of the expense was charged up at so much per thousand of the duly counted and completed product. This company employs oil as fuel and considers that they have a very much cheaper proposition than either wood or coal. Mr. Curran's company runs a clay brick yard in connection with their sand-lime proposition, and he is in a position to get comparative data of the two rival materials, and states that from the standpoint of cost alone they are very well satisfied as it stands. Mr. Robert E. Dolan, of the Silicated Brick Co., Denver, Col., said that he would speak from his own personal experience upon the subject of sand-lime brick as his paper had been covered by the discussion thus far, familiar to all the attending delegates, at every point that he could think of bringing out. He said that he had given the cost of production his own personal attention in his plant and had after several failures succeeded in securing what he considered to be a sound method for obtaining his figures, but as these resembled in a large measure those of the gentleman from California, whose paper immediately preceded we will not go into details here. Mr. Dolan spoke of the importance of training the intelligence of employees to get an efficient force, in order to obtain uniformity of the product, and the plant must be run continuously for purposes of economy.

Mr. L. S. Anderson, of the Genesee Sand-Lime Brick Co., Genesee, Penn., said he was very much in the same position as Mr. Dolan, that at his plant they charged up every expense item against the number of completed brick after they are counted. The fuel used at his plant is gas, and he says that he has found by experience that it is cheaper than coal in his locality.

Following this was a lengthy discussion, in which nearly every one present participated, upon the ever important subject of "Cost of Production," and this was found in the main to be reasonably uniform where local conditions did not present some obstacle well calculated before going into the business.

Mr. J. B. Vandever, of the Charles Warner Co., Wilmington, Del., read his paper upon the subject of "Marketing Brick." Mr. Vandever is a practical salesman, and he covered his subject in a masterly way, his conclusion being that a good product is half sold on its merits, and it is up to the manufacturer to have the merit in the goods if he wants it to be successfully marketed, calling attention to the fact that the architect must be careful to exclude every possible element of chance in the selection of his materials for on it depends his reputation which is his living. He said that his experience as a salesman could be well applied in this connection, there were

just three cardinal points to be considered, and these three are faith, hope and quality. The faith of the salesman in the material he has to offer, the ever present hope that he is neither deceived nor deceiving others, and the satisfaction of quality to back up his efforts. Several other members presented their views with regard to the marketing of brick, but as the case was already very well covered the president suggested that we had better hasten on with the program.

Mr. Henry Richardson, of the Richardson Scale Co., New York City, resumed the subject of "Measuring Devices," and had on exhibition a working model of the Richardson scale which mixes the materials by weight in an automatic way. Mr. Richardson had worked on the perfection of this machine for more than twelve years and to say that it is a mechanical wonder would not be sufficient. The mixing in this machine is done entirely by weight and not by volume, consequently with properly prepared material a constant proportion can easily be automatically maintained continuously and by readjustment of the weights any desired proposition can be produced.

Mr. J. L. Jackson, of the Saginaw Sand Stone Brick Co., Saginaw, Mich., read his paper entitled "Publicity in Showing the Advantages of Sand-Lime Brick." Mr. Jackson told a number of his experiences with regard to entertaining the Architects Club in his home city, and numerous other efforts of a similar nature, and came to the conclusion that personal solicitation had been more prolific in obtaining results than any other method he had found.

Mr. Harry de Joannis, of "Brick," read a paper on the subject, "It Pays to Advertise." Mr. de Joannis showed himself to be an expert upon the new science of publicity and explained the intricacies of display, contour and combination, the selection of paper and the introduction of color into the display advertisement, not forgetting the feature of elegance which adds so much to the modern printed advertisement.

The president said that we would have to cut out any further discussion in order to complete

the program in time for the members to catch their trains, as very many had informed him they had important engagements elsewhere.

Mr. Bolton Smith begged that they dispense with his paper upon the subject of "Management," as the hour was getting late and in a happy vein he stated that he had visited a large number of plants within the last year and that he had seen some of them so ably managed that he felt that A. T. Stewart's old saw was applicable in his case, namely, "a man who fails in his own business is good enough to manage the affairs of another man's concern, as because he will have ever present the rocks upon which his own enterprise was wrecked."

Mr. Smith offered to read as a substitute for his paper a communication from Mr. Alfred G. Patton, a member of the Fire Underwriters Association upon the subject of "Insurance." Mr. Patton proceeded at great length to tell how to construct and handle the operations of a manufacturing plant in such a way as to obtain the most satisfactory results in insurance rates. The paper went into minute particulars and was listened to with interest by the assembly. Mr. Smith explained that at the present time there was no insurance classification under which sand-lime brick could come properly before Underwriters' Boards. They insist on classifying it as a clay brick proposition, which is a much higher risk for the reason that the kiln constitutes such a large proportion of that operation, and it is not fair to charge sand-lime brick any such rate. At the close, he suggested that it might be advisable to eliminate the word brick when applying for insurance, and secure a classification similar to that of the concrete or pottery people which is a much lower rate.

Mr. Lippincott, of Philadelphia, remarked that if the manufacturer undertook all the measures recommended by Mr. Patton to secure a lower rate of insurance he would have neither time nor capital left with which to manufacture brick, and that it might be a good thing to go into the insurance business instead.

Mr. Brodhead thought there was a certain amount of risk that every manufacturer must expect to undertake.

Mr. Penfield then read the resolution which was drawn up by the committee with regard to standardizing the tests of sand-lime brick and for appointing a committee to join a similar one from the American Society for Testing Materials to continue during the coming year, and to report at the next convention of this association. The president appointed Mr. Payne, Dr. Lazell and Secretary Duerr.

Mr. Bolton Smith, chairman of the committee on nominations, recommended the re-election of W. K. Squier for president, Robert E. Dolan for vice president, H. O. Duerr, secretary, and Wm. King, treasurer. These gentlemen were unanimously re-elected, and each made a graceful little speech acknowledging the compliment and accepting the responsibility.

After a little debate in regard to the selections, the Executive Committee was elected as follows: Messrs. Bolton Smith, Sundstrom and Anderson.

At the suggestion of the president, a vote of thanks was tendered to the management of the hotel for the many courtesies accorded to this convention. Also to Mr. Grieve, of Ceylon, who had been such an active participant in all the debates, and had journeyed all the way from the antipodes in order to be present on this occasion. Then, there was a vote of thanks to Dr. Lazell, and to the treasurer, the secretary and the president; in fact, the convention got to feeling very thankful, and the genial secretary suggested that the last vote of thanks be tendered Mr. Moroney because he kept his promise to his girl and stayed on the water wagon throughout the whole convention, and this was all the compensation that Jack got for his good behavior.

On motion the convention then adjourned, to meet at the call of the secretary by order of the Executive Committee, at a time and place to be selected by them during the month of December, 1906.



DETROIT CONVENTION OF THE NATIONAL ASSOCIATION OF SAND-LIME PRODUCTS, DECEMBER 7, 1905.

NOTES OF THE MEETING.

Mr. H. W. Bedell, of Picton, Canada, is contemplating entering the sand-lime brick business in his locality.

Mr. C. E. Emerick represented the American Process Co., of New York, and succeeded in shaking hands with every delegate.

J. S. Palmer, of the Sebawaing Sand-Stone Brick Co., believes in having a publicity bureau for he knows the value of printers' ink.

Mr. King, the popular treasurer of the association, had in the exhibition department blue prints of a sand dryer which he has recently patented.

If you didn't hear John O'Connell tell that story on his brother Andy about being willing to pay for the drinks, you missed one of the good things that were floating around.

S. A. Williams, he of Atlas Car fame, from Cleveland, attended the convention, but because he was on his extra good behavior, everybody suspected him of attending strictly to business.

Mr. H. K. Reader, of the Ohio Ceramic and Engineering Co., Cleveland, Ohio, was an interested attendant, and he had something to say about a new press that his concern has about ready to offer to the trade.

Secretary H. O. Duerr has proved himself to be a man of great parts and wonderful energy. The vote of thanks he received for his untiring efforts on behalf of the association were given with a hearty good will.

H. H. Wolf, of the Diamond Brick Co., Muncie, Ind., says he is just getting started into the making of sand-lime brick, and he didn't know how many things had to be studied out before the thing could be done successfully.

Mr. Nagel, of the Iowa Granite Brick Co., Clinton, Iowa, had a large number of photographs of fine buildings which have been constructed with the product of his plant within the last year which were of interest to all those present.

Fred W. Cubbins, the first lieutenant of the Memphis Granite Brick Co., of Memphis Tenn., is one of the good Indians. He was raised in the clay brick business, and is practical in his ideas with his high sights set for the long green.

The American Sand-Lime Brick Co., the well-known machine builders of Chicago, was ably represented by Messrs. W. W. Huffman, W. C. Vanneman, John Moroney (on the water wagon), and A. Eerg. All of these gentlemen contributed to the pleasure of the meeting.

R. E. Dolan, of the Silicated Brick Co., Denver, Col., proceeded immediately after adjournment to organize a convention league among the members in order to influence the directors to hold the next convention in his city. Andy O'Connell, of Chicago, was the first man to join this society.

W. H. Caskey, represented the Cleveland Car Co., of West Park, Ohio. He said he just came to the meeting to see if there was anything new in the car requirements, but was happy to state that the result of his investigations showed that he had just the car for the business.

J. B. Vandever, of The Chas. Warner Co., Philadelphia, Pa., is one of the good Indians who is willing to do any amount of work. He was on hand while Prof. Woolson was conducting the experiments for the association, and explained the pictures and drawings after adjournment.

Mr. George T. Butler, Fort Wayne Pressed Brick Co., reported that he is rebuilding his plant, which was burned to the ground on November 13th, in the most modern fashion. All the buildings will be constructed of sand-lime brick, and the machinery equipment will be selected regardless of expense, but with the most careful attention to the results expected.

Richard H. Brodhead, of Greenville, Penn., was christened "Dick," and so accepted on the first day of the convention. On the second day it was changed to "Dick, The Texas Steer," and whatever else is to be said of him this fact always remains that Dick is a good steerer, and he can tell more stories and better ones than ever did Milton G. Barlow in his palmiest days.

Mr. Samuel C. Moore, of Lafayette, Ind., had a very attractive proposition in the shape of a full equipped sand-lime brick plant in conjunction with a splendidly economical sand proposition close to Lafayette, Ind., for sale. A complete inventory giving every detail of the machinery and buildings, as well as the terms of sale are explained on page 73 of this issue of ROCK PRODUCTS.

Mr. Bolton Smith, of the Memphis Granite Brick Co., Memphis, Tenn., was one of the most active members of the convention. Mr. Smith has visited a great many of the plants that are in successful operation, and, from an educational standpoint, he was prepared on all occasions to offer the results of his observations and comparisons. In fact, we do not know what we could do without him.

President W. K. Squier is a hard worker, not only at the time of the convention, but all through the year has he given his time and ability to working out the good things which were developed at the convention. Indeed to the president and secretary much of the credit is due for the splendid array of talent that was concentrated on this occasion for the entertainment and instruction of the assembly.

Dr. Lazell was chosen as the official chemist of the association by unanimous vote of the assembly. The Doctor has proven himself worthy of the high esteem in which the members hold him and the research that he has already covered makes him "the just right" man for the position. However, when we look at the amount of correspondence with question marks contained, the Doctor has our sympathy.

Mr. L. W. Penfield insisted on talking off the record, but some of his remarks on machinery, especially those relating to the press should never have been lost to the association. When a man has carefully studied out a problem as Mr. Penfield has, he should not allow his modesty to stand in the way of its going on record. Nobody was particularly interested in the rhetoric of the paper but the meat that was in his remarks was worthy of any paper that was presented.

Mr. John Grieve, of the Hydraulic Brick and Tile Co., Colombo, Island of Ceylon, and P. L. Simpson, of the National Brick Machinery Co., Chicago, were the only two Scots present. They were both born on the banks of the Frith of Clyde, and consequently gravitated together as clansmen will. These two gentlemen were prominent in every discussion that came before the association, and if the camera had not gone wrong we would have a good picture of them taken in characteristic attitude. (See p. 56, January 22, 1906.)

Immediately after the convention adjourned in Detroit quite a party of delegates adjourned to Holland, Mich., on invitation of Mr. Straight, to view his model plant in operation. Among these were Mr. Grieve, of Ceylon; Mr. Dolan, of Denver; John and Andy O'Connell, of Chicago; and, in fact, most of the gentlemen whose homeward journey led to the west, as the town of Holland is located close to Lake Michigan on the route to Chicago. They spent the day at Holland, and Mr. Straight proved himself to be a genial entertainer as well as an able debater in the discussions of the association.

W. J. Carmichael has just returned from the City of Mexico, where, as the representative of the American Clay Working Machinery Co., he had put in a splendid plant for a company composed of Mexicans. Mr. Carmichael says they have a very profitable proposition down there, and promises the readers of ROCK PRODUCTS in the near future a little story from his own pen with regard to that trip. Mrs. Carmichael was with him on the journey and they had some very exciting and amusing incidents. Carmichael says Senor the same as if he had lived in Madrid all his life. If his name wasn't Irish maybe it would be proper to put Don in front of it.

The Giffert Roofing Co., Chicago, Ill., has been organized with a capital stock of \$2,500.00, for the manufacture of roofing and building material. Albert J. Giffert, Jno. Waters and Philip H. Allen-derber are the incorporators.

The W. P. Leavitt Sons Co., of Newton, Mass., has been incorporated to engage in the roofing business. The incorporators are: Edward P. Leavitt, Arthur M. Fenton, Jno. A. Leavitt and Earl E. Leavitt. The capital stock is \$10,000.00.

Sand and Gravel

Do Not Wish to Mislead.

TOLEDO, OHIO, December 4.—The Ohio Michigan Sand and Gravel Co. have written us saying: "In your November issue you stated that the above company had been incorporated with a capital stock of \$200,000.00. As we have not the slightest desire to sail under false colors at this time or any other time, we desire you to correct the same to read \$25,000.00. At a recent meeting the following officers were elected: Chas. Fox, president; Floyd J. Norris, vice president and general manager, and Geo. E. Hardy, secretary and treasurer. It was decided to increase the capacity of our plant at Chilson, Mich., from a capacity of 15 to 20 cars per day and also add a crushing plant."

This company recently purchased the Toledo Stone, Sand and Gravel Co., which has been operated for some time at Chilson, Mich., by N. B. Smith. This plant has been putting out about five cars daily in torpedo sand, roofing-gravel and concrete gravel. With the increased output the operations of the company will be considerably enlarged. They have about all the orders they can take care of at the present time, and have a considerable amount of gravel which will be used for concrete work. Up to the present time it has been difficult to secure large quantities of gravel, but the operations of this new company will relieve this long felt want.

Has Sold Out Its Plant.

CHILSON, MICH., November 23.—The Toledo Stone, Sand and Gravel Co. write: "Our company has been sold to the Ohio and Michigan Sand and Gravel Co., of Toledo, Ohio. We will go out of business on January 1, 1906."

Company Changes Hands.

PINE BLUFF, ARK., November 28.—The Pine Bluff Sand Co., which recently went into the hands of a receiver has been purchased at a private sale by the Clegg Sand Co., and is under the management of M. R. Stewart. The price paid was \$1,200.00. The new company will continue to operate along the lines formerly carried on by the Pine Bluff organization.

Two Companies Consolidate.

HANCOCK, MD., November 25.—All the operations which have heretofore been under the guidance of the West Virginia Sand Co., and the Pittsburgh Sand Co., have been consolidated and will hereafter be known as the West Virginia and Pittsburgh Sand Co. This organization has a paid up capital stock of \$350,000.00. A number of improvements will be made which will give the capacity of the two plants over 500 tons of glass sand daily. It is said that additional sand land will probably be purchased and a large number of hands will be given employment. M. A. Hanna is president of the entire organization.

The Mercer Co. Sand Co., of Buffalo, N. Y., has been organized with a capital stock of \$1,000.00. The directors are: Jno. Seibert, Jr., Alfred Hunell and C. T. Horton.

The Cream City Sand Co., of Milwaukee, Wis., has been incorporated by Wm. Gutknecht, Chas. Zube, Otto Schomberg and Richard Schomberg. Capital stock \$100,000.00.

The Atwood-Davis Sand Co., Chicago, Ill., has been organized with a capital stock of \$40,000.00, by Frank A. Cartensen, Herbert D. Howe and B. Walker. The capital stock is \$40,000.00.

The Jno. D. Rose Co. have purchased property at Milton, N. Y., consisting of thirty acres of molding and tempering sand. The bank is 160 feet in height and is considered a valuable property. A number of improvements will be made and equipment installed for operation.

For the Retailer.

The National Builders' Supply Association.

Meets Semi-Annually.

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Official Organ, ROCK PRODUCTS.

Attend the Seventh Annual Meeting.

Well, it is a settled fact the annual meeting of the year, under the auspices of the National Builders' Supply Association, will be held at one of the greatest hotels in the country, the Bellevue-Stratford, at Philadelphia, February 6, 7, and 8. The Philadelphians in a characteristic way are working out plans to make the stay of the visitor in the Quaker City as pleasant as possible. What else could you expect when you know that the following are the committee on arrangements and entertainment: Wm. Irvine, chairman, Knickerbocker Lime Co.; Charles Cox, of Charles Cox & Bro.; Mr. Walter Bradley, Mr. Hoover, of the Bath Portland Cement Co.; a representative of the Phoenix Portland Cement Co., and one from the Lister Supply Co., and Charles Warner, of the Charles Warner Co. Mr. Charles Cox is secretary.

The entertainment feature will be looked after and we hope to announce in the January paper the latest news in reference to what is doing when you go to Philadelphia. You can feel at peace with the world because we are going to keep Joe Degnan at home. Make a memorandum of the dates mentioned and be sure to plan to be a part of the business and social sessions at Philadelphia. You will be made thrice welcome, for that reform Republican Mayor is going to welcome the delegates to Philadelphia and his greeting will be supported by Thos. Armstrong, of Armstrong & Conkling, president of the Builders' Exchange at Philadelphia, and by every member of that body.

A Year of General Prosperity.

Without an exception every industry throughout the country has enjoyed a most successful and profitable year during the twelve months which are rapidly drawing to a close. Among the industries that of the builders' supply has had ample evidences of this prosperity, so that those engaged in this growing industry have reason to feel very much elated over the amount of business done.

One of the best evidences of any country's prosperity is the number of buildings constructed during any one period, and certainly the year of 1905 has been particularly blessed in this respect. Throughout every section of this broad land reports have come month by month, showing that buildings of various sizes have been constructed in larger numbers than was ever known during any one period of twelve months before.

Wherever buildings are constructed, streets improved and other evidence of prosperity are made, the builders' supply men come in for their share of the good things distributed. A large number of organizations of this character has entered the field and without exception, all of them have had a most gratifying year.

In addition to this the indications for the coming twelve months seem even more flattering than has ever been known, and the builders' supply people are consequently in a position to reap a harvest that should make each and every one of them welcome the new year with gladdened hearts and feelings of sincerest thankfulness. This we are confident they will do, and when the holiday season is past they will put their shoulders to the wheel and work with renewed vim, so that at the end of next year they will have even more to be thankful for than they have had in this prosperous year of 1905.

More Care Vitally Essential.

There is one subject of interest to the builders' supply dealers which has not as yet been given sufficient consideration, and this is regarding a proper arrangement of the warehouses. There has been a great deal written upon this subject, but as yet only half of the subject has been considered, and consequently a few remarks will not be out of order at the present time.

As the new year approaches most of us endeavor to form resolutions varying in number, according to our individual weaknesses. Now this is the time and season when the builders' supply man should form a resolution to rearrange his warehouse and reorganize things generally.

A visit to the average builders' supply depot is anything but a pleasure as the sights that meet the eye, in many instances, are a conglomeration of cement, lime, broken sewer pipe, building paper, roofing material, and other articles generally found at a place of this kind. It is regrettable that more care is not given to the builders' supply warehouse, and that the commodities are not arranged in such order as to avoid both loss, time and material, thus saving many hundreds of dollars in a year's time.

There have been many plans laid down which can be followed to an advantage, but it generally happens that the dealer must arrange his warehouse according to the size and location of same, and in this instance be his own architect. Properly arranged bins of wood or concrete, preferably of the latter, however, for storing lime, cement, plaster, salt, etc., should be arranged in their proper places, while certain sections should be given to these same commodities when packed in barrels. The same should be applied to sewer pipe, fire brick, building materials and any other line, that the supply man might carry. These should be so arranged and graded that they can be handled instantly, thus avoiding vexatious delays which items of expense are so frequently lost sight of by many of the builders' supply dealers.

Have a care for the details of your business, for it is these apparent trifling affairs which in the aggregate mean many dollars, either on the profit or loss side of your ledger at the close of your business year. There is much that could be written upon this subject, and it is our intention to revert to the matter frequently during the coming months, and we would be pleased to hear from the various supply men regarding the method in vogue at their places of business, and any suggestions they might have to offer, we will gladly publish in our columns.

The suggestions given here will undoubtedly

bear fruit if they are given due consideration, by this class of dealers, and we are confident that many of them will read and profit thereby, and will form a resolution, as we have suggested, for a beginning of the new year.

Drifting Into Newer Lines.

It is a notable fact that when any commodity becomes scarcer or practically extinct, that there are other means found and substitutes adopted, which are not unfrequently superior to the original commodity itself. The alarming diminished supply of timber for building purposes is now a fact fully realized by every thinking man. The number of people engaged in this single industry run into many thousands, and each year more of them are realizing the urgent necessity of taking steps toward meeting this condition, and as a consequence many of them are drifting into the builders' supply business.

Formerly a retail lumber dealer adhered strictly to his line of business, the demand being so great and the supplies so plentiful that it required all of his time and capital to take care of this large business. It is not an uncommon sight by any means in this day to find practically all of the retail lumber dealers carrying as side lines, a full stock of builders' supplies. In some instances the latter are greatly in excess of the former, and net them greater returns. This state of affairs has not come at any given period, but the change has gradually forced itself upon the lumber dealers and they have been compelled in a measure to accept it.

This is simply the beginning, for as the years go on and the timber supply decreases many of those now engaged in the lumber business will be compelled to cease operations altogether in that line, and devote their attention solely to the subject of supplies of various kinds. There can be no doubt but that practically all of them realize that such a condition does not exist at the present time, and are naturally making their arrangements accordingly.

Builders Supply Men in Indiana.

FORT WAYNE, IND., December 1.—Krusse & Busching, who for several years have been operating in the line of building supplies in this city are up against a proposition as the city gas company has bought the ground on which their yards have been located, and they are compelled to move, and have secured a location on Clinton Street. Both of these gentlemen are named William, so if you go in the front door and say, "Hello, Bill," you are sure to be right. Up to six years ago these gentlemen were connected with Mr. M. Baltes' operations, and no doubt absorbed that element of success which has always attended his enterprises. This is the first time that the writer ever knew that Sam. J. Vail, the famous cement salesman, who carries the red seal of the Whitehall Portland Cement Co., on his cards was Dutch, but Busching declares that if he is not Dutch he is a very good substitute. Anyhow, Krusse & Busching handle a large quantity of Whitehall cement and Huntington lime from the Western Lime Co., both common and quick lime and in the hydrated form. They handle the Chattanooga mortar colors and the white sand comes from the Garden City Sand Co. Of course, they handle a full line of tiles, sewer pipe and all the accessories required by the builders.

The Trentman Supply Co., Fort Wayne, have their offices located right alongside the Nickel Plate track, and their warehouses are conveniently located for receiving and handling supplies. They handle Atlas and Peerless cement besides a small quantity of natural cement. The Western Lime Co.'s hydrated lime as well as common lime is the favorite with them. They handle metal and wood lathe, fire brick, and the local plasters that are manufactured by the home concern.

E. M. Baltes & Co. is the old original building supply concern in Fort Wayne. This concern grew out of the contracting business which was conducted for many years by Mr. M. Baltes, who looked upon the city as a creature of his own, having erected so many of the principal buildings and changed the little village into a great city. In the active management of this concern at the present time, Ed. M. Baltes and Theo. C. Schweir are in the harness, but Mr. M. Baltes still comes around every day and does a good deal of silent work. We will have a more extended notice of this concern in next month's ROCK PRODUCTS, with a picture of their new brick warehouse which will be completed at that time.

Look for Good Year.

Letcher & Witt, of Richmond, Ky., general builders' supply dealers, are enjoying a good demand at present with indications for continued prosperity. The firm is well known in and about Richmond, Ky., and are large dealers in lime, sand, cement, wall plaster, etc. They have a large warehouse on the Louisville and Nashville railroad, and are in a position to handle considerable business. They are confident that the coming twelve months will be the most propitious for handlers of builders' supplies.

A Wisconsin Supply Man.

One of the leading builders' supply people at Meridian, Wis., is Knute H. Flaokl. He deals largely in lumber, roofing, building papers, etc., and enjoys a very prosperous business in that locality. He is widely known among building operators and has enjoyed a successful year's business, which he has every reason to believe will materially increase in the future.

A New Building Material.

ROCHESTER, N. Y., December 4.—An organization which has recently been established in this city is known as the Imperial Sanitary Floor Co. This company manufactures what is known as Imperial sanitary flooring, which is something entirely new in the building line. Although this material has only been on the market a short time, it has attracted considerable attention from leading architects, contractors and builders, who claim that it will be the most profitable and popular material of its kind put on the market.

It is absolutely sanitary, and while it possesses all of the durability and hardness of tile and marble, it is artistic in design and finish, as well as noiseless. It is impervious to fire or water, easily cleaned and is put down in one sheet, thus doing away with cracks for the collection of dirt and moisture. The company claimed that they have been quite successful thus far and have a large number of orders on hand at the present time, and express themselves as being perfectly satisfied with the outlook, as they have every reason to believe that they have a building material which is bound to become popular.

Two Prominent Ohio Dealers.

VAN WERT, OHIO, December 1.—The builders' supply industry in this thriving little city in Northeastern Ohio is represented by two enterprising concerns. J. G. Farnam has a commodious shed for receiving his supplies near the center of the town alongside the Pennsylvania tracks and in another part of the town he conducts a factory for the manufacture of concrete building blocks, using a machine from Auburn, Ind. He runs a Coltrin mixer and in his yards are to be found some very fine specimens of building blocks. The gravel he uses comes from Greenville, Ohio, and he is the local agent for Alma cement.

Rupright Bros. also handle a general line of building supplies including sewer pipe, tiling, brick, coal, ice and straw. They are also agents for Tiger cement. They manufacture concrete building blocks using an Ideal machine from the well known concern at South Bend, Ind. Their mixer was built by O. G. Guss, of Delphos, Ohio, and does very satisfactory work. They have made a large number of blocks this season and in every instance their customers have stated that they have been thoroughly satisfied with them as a building material. Mr. Rupright says they have had a very satisfactory season's business, and that building operations at Van Wert are constantly increasing.

Some Enterprise in the North.

MUSKEGON, MICH., December 2.—There has been quite a building boom in this old town, which first became famous by reason of its great sawmill operations a generation ago when Michigan pine was the great feature of the lumber market of the world. Now Muskegon is growing up on a new basis for large factories for the manufacture of machinery, woolen mills, and foundries with permanent brick structures have transformed the scene.

Mr. P. J. Connell came to Muskegon thirty-eight years ago and soon became a building contractor in which business he continued until 1893 when he entered the builders' supply business, and recently he has associated with himself Mr. Henry S. Connell. A few years ago they commenced the

manufacture of clay brick and the whole business is now conducted in the name of the Holton Brick Co., although they deal in fire brick, sewer pipe and a general line of builders' supplies. They handle the old Bay Shore Standard Petosky lime, Great Northern and Elk cement, besides roofing paper and roof paint and contract to supply the mason with every kind of material that he requires. Mr. Connell reports a good season's business and thinks it likely that his firm will be represented at the Brickmakers and Builders' Supply Conventions in Philadelphia.

The Louis H. Kanitz Co. report a very good business for the year. They operate as general contractors in concrete and have just bought a Smith mixer to accommodate the increasing amount of business which is offered in this particular line. A few years ago concrete construction was practically unknown in Muskegon, all the sidewalks having been built of the rough boards that came from the sawmill. But the sawmills have gone the way of all this earth and as the board walks have to be replaced they are put in with concrete. This concern entered the builders' supply business as early as 1867, and they now handle a full line for the complete accommodation of the stone and brick mason as well as their own concrete operations. They handle New England Portland cement principally and Sheboygan lime, besides all kinds of building brick including Zealand brick, stone, crushed stone and plaster, making a specialty of that excellent ready-prepared wall plaster known as Sackett's Plaster Board. They handle a full line of roofing material including clay, tile, sewer pipe and both metal and wood lathe. This is a very enterprising concern that always keeps up with the times, and was one of the first to handle new building materials as fast as their useful qualifications are approved.

Made Many Improvements.

INDIANAPOLIS, IND., December 14.—A. B. Meyer & Co., large dealers in building material write us: "We have enlarged our building material business to quite an extent, increasing the plaster plant where we manufacture our Stonewall sanded hard plaster, by installing latest improved Hetherington & Burner sand drier. In this connection would say we have been notified that the government has accepted the use of our Stonewall hard plaster on the courthouse now being built at Crawfordsville, Ind. We have also completed the building of the large warehouse at one of our yards. This warehouse covers a space of 60x110 feet. The side wall and floor is all concrete, the floor setting up 3 feet from the ground being filled in with gravel. The sub-structure is made from wood with gravel roof. This now gives us storage capacity for 12,000 barrels of cement. We look for a very heavy material business this winter as our Board of Trade and Knights of Pythias Buildings being very large are in course of construction, as well as a great many smaller buildings. Most of these large buildings will carry through next year. We congratulate Rock Products on the advanced moves they are making."

Some Hustling Supply Firms.

TOLEDO, OHIO, December 20.—Toledo is experiencing the dullness which is natural at this season of the year. It comes as a breathing spell after an exceptionally busy fall. This city is rapidly taking her place among the great cities of the country. Much of the downtown property which has lain unimproved is passing into the hands of younger and up-to-date people who realize the possibilities of the city. Many new and modern buildings are being planned. A quarter-million-dollar hotel is one of the many new buildings that have been started recently. The Commonwealth Building Co. started to erect a mercantile building at the corner of Jefferson and Superior, but changed their plans and have decided to erect the quarter-million-dollar hotel already spoken of. It is to be of enamel white brick ten stories high and is to be modern in every respect. There are many other new buildings contemplated; and, in fact, the building contractors and dealers look forward to a very busy spring.

There are four builders' supply companies here and they all report a brisk business.

The Toledo Builders' Supply Co., one of the largest concerns of its kind in the country, have enjoyed a very large fall trade and predict a big spring business. Mr. Richard Kind, the manager, says that Toledo is on the boom. They operate their own plaster plant at Cresceus; have six dredge boats and large dock properties, as all

sand is dredged or scooped from the bottom of the lake. They also operate a brick yard in connection with the plant. They handle all kinds of builders' supplies and are doing a large business.

The Ohio Builders' Supply Co. are dealers in mortar, sand, lime, cement, plaster, tile, sewer pipe, stone, flue lining, etc. They are manufacturers of the Economy hard wall plaster. Egbert Denville is president; Otto Augsbach, vice president; A. H. Gallagher, secretary and treasurer, and W. O. Holst, manager. They have had an exceptionally large fall business and anticipate an even larger spring trade.

The Buckeye Builders' Supply Co. also reported a brisk business with the spring outlook more than encouraging.

A Southern Indiana Dealer.

NEW ALBANY, IND., December 12.—E. T. Slider, who deals largely in builders' supplies, has noted a considerable increase in his business during the present year. There has been a large number of buildings erected in this city during the present year, and Mr. Slider as been successful in securing contracts for the greater portion of the supplies. He has built up a very large business during the past few years in this line, and is confident that the coming year will be the largest in his business history. Prospects for building in this city were never more flattering, and consequently Mr. Slider can reasonably expect his share of the orders which are bound to accompany this encouraging state of affairs. He does not confine his business to New Albany, altogether, however, as he has a nice out-of-town trade, and is widely known throughout this section of the State.

The Georgia Building and Material Co., Atlanta, Ga., has been organized with a capital stock of \$5,000.00 to engage in the manufacture of building materials, including cement, lime, sand, etc. A. S. Guckenheimer, M. J. Cavanaugh, M. Alexander, M. A. O'Byrne are the incorporators.

The Hastings Supply Co., of Hastings, N. Y., has been incorporated with a capital stock of \$25,000.00 to deal in a general builders' supply line. The incorporators are: Edward S. Perot, Wm. H. Lewis, Charles S. Bevers, Frederick G. Zinsser, W. W. Thompson, David Fulton and George J. Jackson.

The Gelock-Fleming Co., Ltd., has been organized at Grand Rapids, Mich., to engage in a general builders supply business. The capital stock is \$25,000.00, all paid in. The stockholders are: Martin A. Gelock, Samuel A. Fleming and Wm. S. Winegar.

The G. P. Mayer Brick Co., of Trenton, N. J., has been organized by Mark G. Hibbs, Guy M. Neagley and Sadie Logne. The company will manufacture brick, building material, etc. Capital stock \$125,000.00.

The Penn Supply Co., of Camden, N. J., has been organized to manufacture building materials, brick and stone, with a capital stock of \$25,000.00. The incorporators are: William Bates, Samuel F. Wheeler and F. C. Neetweer.

The American Vireous Co., of Camden, N. J., has been organized to deal in cement, brick, stone and other building materials. Arthur M. Hay, Chas. B. Rockwell and Herbert J. Rockwell are the incorporators. The capital stock is \$100,000.00.

The Princeton Brick and Lumber Co., of Princeton, W. Va., has been organized with a capital stock of \$10,000.00. James Collins, of Bramwell; L. H. Perkins, H. G. Woods, E. W. Hale, Isaiah Bee, D. W. McClagherty, S. V. Spaley and W. B. Honaker are the incorporators. The company will manufacture and deal in tile, cement, brick, lumber, etc.

The Mott Haven Contracting Co., the Bronx, New York City, has been organized with a capital stock of \$5,000.00, to manufacture and deal in sand, cement, lime, brick, etc. Robert A. Doolittle, Brooklyn, N. Y.; John McGowan, 3734 Third Avenue, New York, and P. H. Woods, of Mt. Vernon, New York, are the incorporators.

The Specialty Construction Co. has been organized at Norfolk, Va., with a capital stock of \$10,000.00. The company will engage in a general roofing, artificial stone and building supply business. The officers are: J. T. McMahon, of Norfolk, president; S. P. White, of New Brighton, Pa., secretary and treasurer.

SALT.

Have Rebuilt Salt Plant.

HUTCHINSON, KAN., December 8.—After several months' work the extensive operations of the Vincent salt plant have been completed. Something like \$25,000.00 has been expended in making great improvements, which in reality amounted to rebuilding the plant. A new system has been installed which is known as the Grainger process, and practically all of the work will be done in the future by machinery. This change was made necessary by the large increasing demand for this plant's output, and the capacity will be something like 600 barrels per day. It is understood that the plant will be operated at its full capacity for some time to come. Another feature which has just been added is the installation of new boilers which will be heated with oil burning fire boxes, which are in use in a number of modern salt plants of to-day. This feature is considered quite a time saver, as it dispenses entirely with the use of coal. A large number of hands are given employment here, and the output of the plant is to be very considerably enlarged. This is one of the largest salt operations in this section of the country, and it is quite a big industry for this city.

Big Salt Operation.

One of the largest operations of Port Huron, Mich., is the immense plant of the Port Huron Salt Co. This establishment is located on the bank of the Saint Clair river, four miles from the city. At this plant is manufactured the finest table salt used throughout the civilized world, and the number of barrels produced during the present year amounts to 6,000,000, one-half of which has been manufactured for table use. The plant has a daily capacity of 2,250 barrels, and employs 140 people. The business of this organization is continually increasing, and indications are for a much larger output next year than has been enjoyed in the present year. The plant is under the management of Otto Huette.

It is reported that plans are being developed near Ashland, Ky., for the construction of a large salt plant on the alum branch of Catlett's creek. It is understood that operations will begin in the near future.

Wanted and For Sale

One insertion, 25c a line; Two insertions, 50c a line; Three consecutive insertions with no change in the composition, 56c a line. Count eight words to a line; add two lines for a head.

WANTED—HELP.

AN EXPERIENCED man to take charge of plaster department, one who is fully capable of looking after the mixing, etc., a man of practical experience. Address HOWARD HYDRAULIC CEMENT CO., Cement, Ga.

AN EXPERT BLASTER—No other need apply; work the year around; blasting limestone to load with steam shovel; wages to right man \$100.00 per month. Address D-Z 1, care Rock Products.

BUSINESS MAN conversant with and able to take charge of cement stone plant. Will pay salary or percentage of profits. Opening is good for a hustler. Address B Z 3, care Rock Products.

FOREMAN—For our sand-lime brick factory. Only experienced men need apply. ST PAUL BRICK CO., St. Paul, Minn.

GOOD MAN thoroughly conversant with cement stone business, to take charge of plant; am willing to pay salary or percentage of profits. This is an exceptional opportunity. Address B Z 4, care Rock Products.

SUPERINTENDENT plaster plant. A man who is experienced in the manufacture of hard wall plaster, and is capable of taking full charge of a modern plant. Address B Z 5, Rock Products, giving references and salary expected.

BUSINESS OPPORTUNITIES.

NOTICE!—Cement Block Machine Companies—For \$1.00 I will furnish you 106 names and addresses of parties who have purchased my formula for making artificial stone. All those parties are interested and in the market for block machines. Every section of the globe is represented in those 106 names. JOHN O'CALLAGHAN, 1521 Main Street, Baton Rouge, La.

PARTNER with capital to engage in manufacture of a new hard plaster; a hydraulic mortar composition showing great merits and large profits. Address A. C. SCHULZ, 53 Lincoln Avenue, Detroit, Mich.

SIXTY shares preferred stock United States Gypsum Co., par value of shares \$100.00 each. Make me an offer on this stock. O. J. DOLAN, Peoria, Illinois.

THREE HUNDRED AND FIFTY ACRES, all underlaid with 6 ft. vein Portland cement rock, cannel and soft coal, a fine shale, best quality of fire clay, potters' clay, pyrolusite and manganese mine, lime and sand rock, both of the best quality, and fine bed of gravel and sand; abundance of heavy oak timber; price, \$20.00. A splendid proposition. Address J. H. McDONALD, Sidney, Iowa.

FOR SALE—MACHINERY.

AIR COMPRESSOR, CRUSHER—One small Rand air compressor, one Surtivant "Little Giant" crusher, spiders and shafting for revolving screens, several sets of 30-in. mill stones, 500 ft. 3/4 in. log chain, large bevel gears, small iron turn-table. Write us for prices. HOWARD HYDRAULIC CEMENT CO., Cement, Ga.

100 single deck cars, 3 transfer cars, 1 centrifugal pump. Address O. W. DUNLAP, Bloomington, Illinois.

ONE KOMNICK—1,000 to 1,200 per hour sand-lime brick press, in good condition; was replaced with larger capacity press, same make. Inquire of SAGINAW SANDSTONE BRICK CO., Saginaw, Mich.

WANTED—POSITION.

PRACTICAL MAN—Having 18 years mechanical experience, now holding responsible position with large lime company, wishes to make a change; familiar with direct, indirect and producer fired kilns; ground and hydrated lime and wall plaster. Address D-Z 2, care Rock Products.

FOR SALE—PLANT.

FOR SALE—A good gas burned white lime plant. Fine facilities right in the center of a good market. Partner with some money can get a profitable investment. Address E H D. Care Rock Products.

FOR SALE OR LEASE—Siluria Lime Works, capacity 150 barrels a day; quality of limestone unexcelled and inexhaustible. Situated at Siluria, Shelby Co., Ala., on the main line of L. & N. railroad, 20 miles south of Birmingham. For further information address DR. E. WAGNER, Montgomery, Alabama.

THE PLANT of the Consolidated Cement Co., Milwaukee, with 75 acres of land on the Lake Shore and C. & N. W. Ry. Co., including boarding house, cottages, etc.; best quality of hydraulic cement; electric conveyor for lake sand, gravel; unsurpassed facilities for manufacturing cement and sand brick, concrete blocks and sewer pipe; plant modern, in full operation with established trade; reason for selling, age of owner; price low and with easy terms. Apply to CHAS. L. KIEWERT, Milwaukee, Wisconsin.



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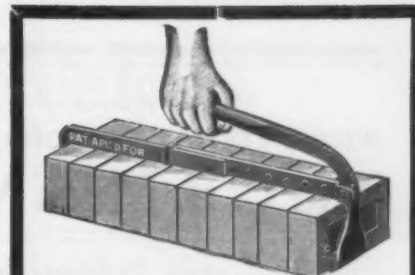


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Why handle brick in the same manner as the Ancients?

Buy a pair of Brick Clamps and be up-to-date. Unload one car of brick and you save the cost of this appliance.

50c to \$1.00 per thousand on Pressed Brick alone, saved by no chips.

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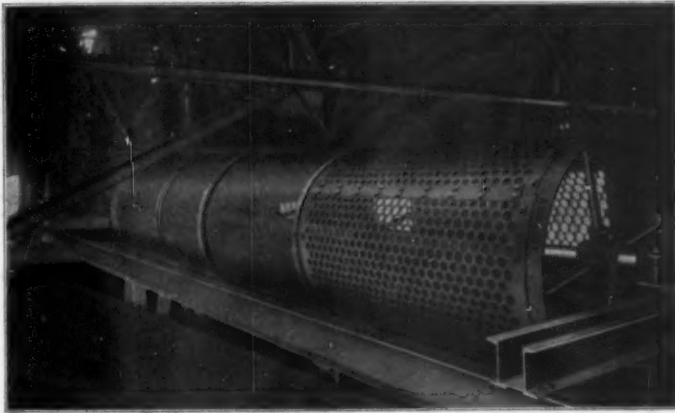
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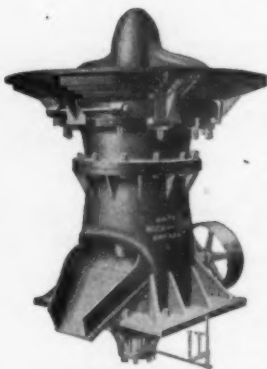
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Newaygo Portland Cement Co.	5
Peninsula Portland Cement Co.	2
St. Louis Portland Cement Co.	2
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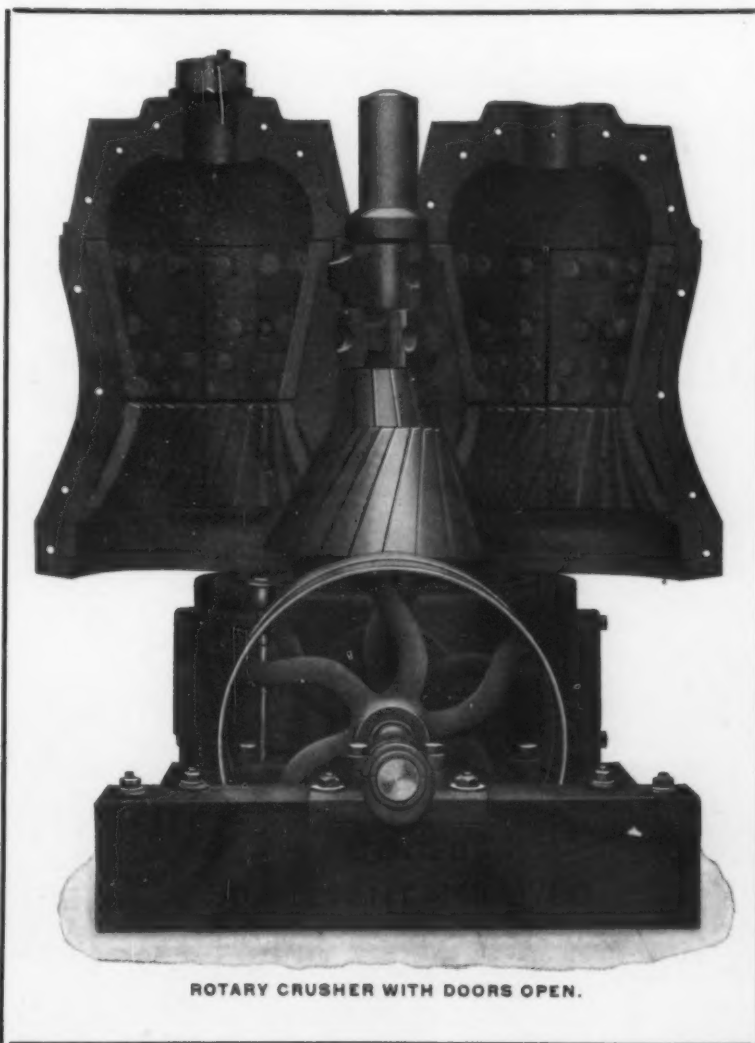
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Crushes to $\frac{1}{8}$ inch
without screens. Sizes
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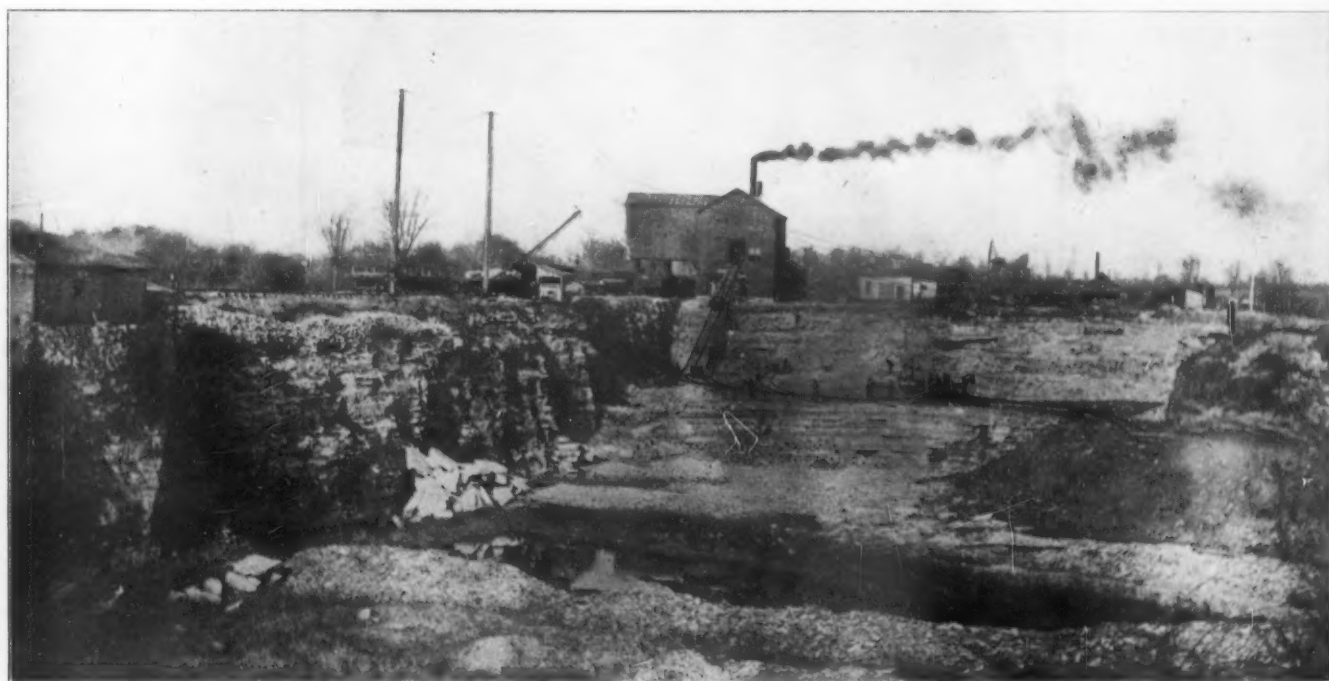
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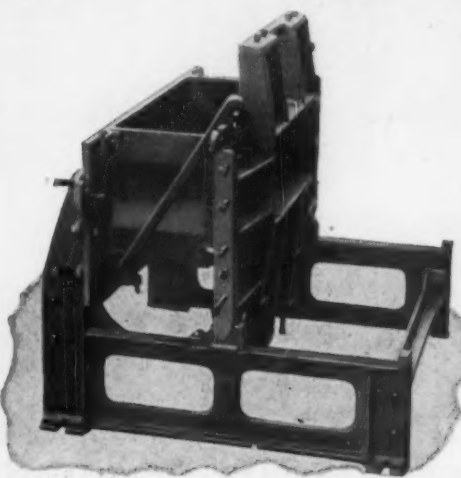
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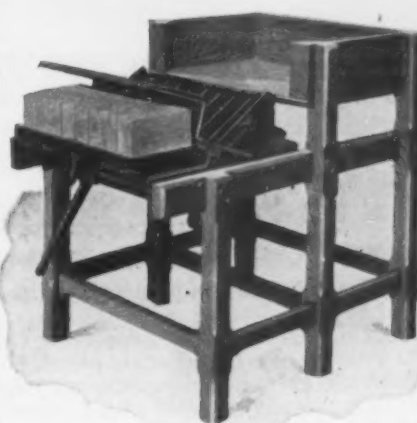
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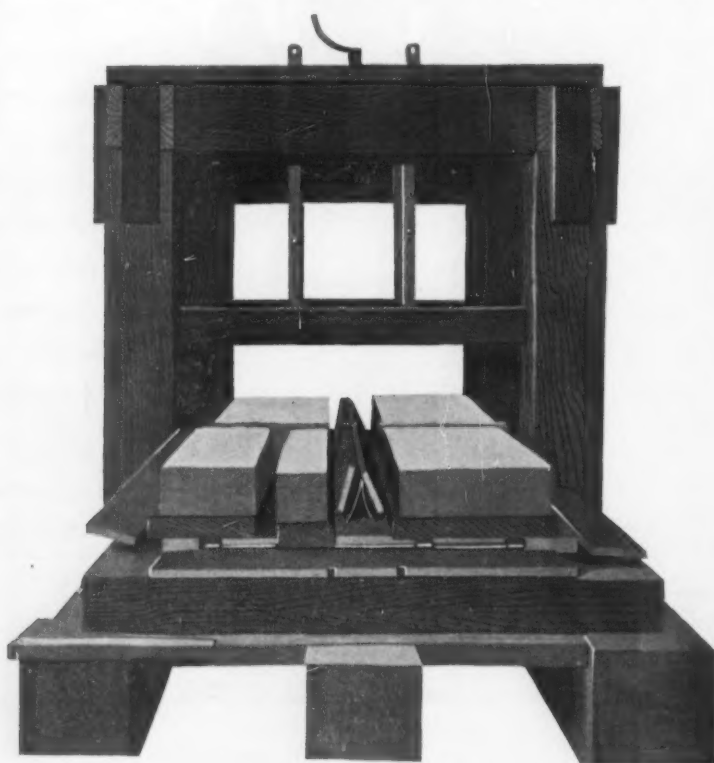
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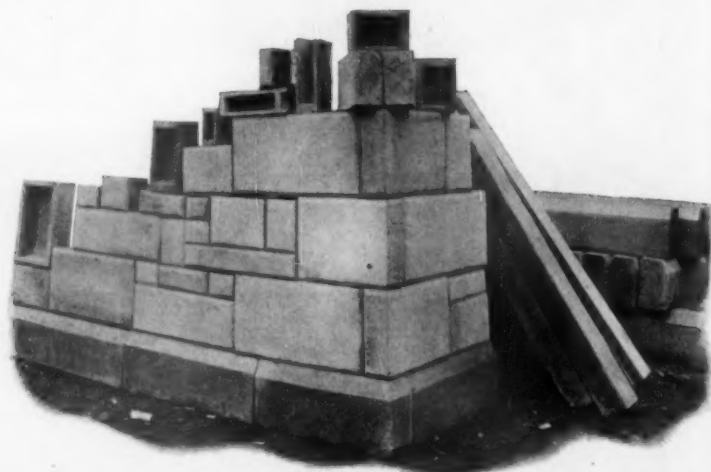
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The labor cost in properly equipped plant in daily operation has been determined at $1\frac{1}{2}$ cents per surface foot, when producing hollow concrete veneering tile.

This is not a hypothetical calculation, but actual results obtained and checked against the pay roll in the inventor's plant, which is literally crowded with business, and turning away good orders for blocks every day.

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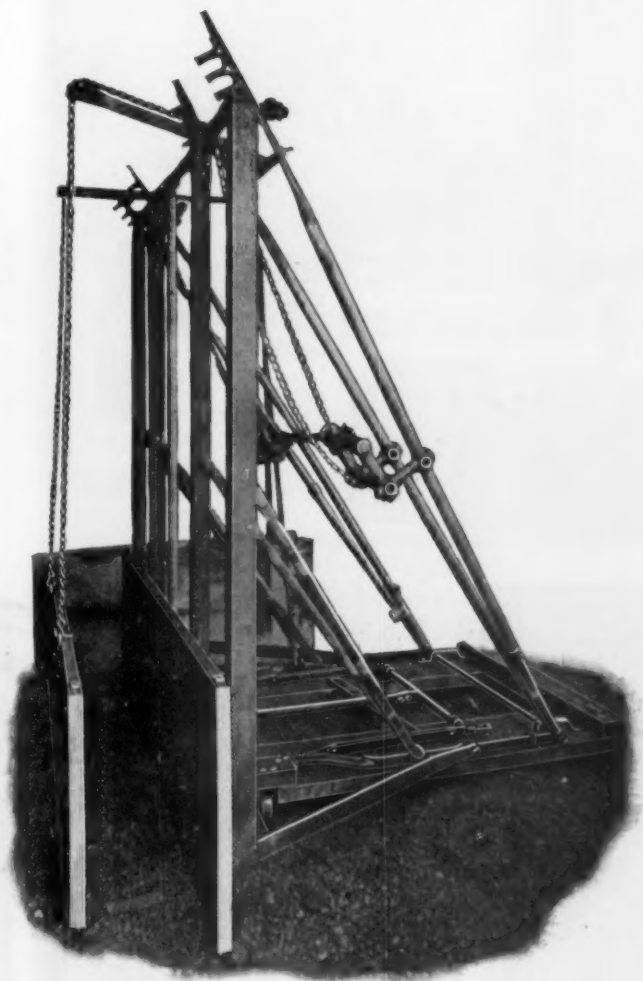
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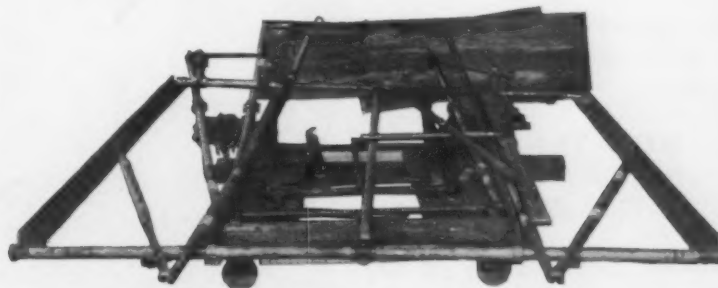
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For Monolithic and Reinforced Concrete Construction.

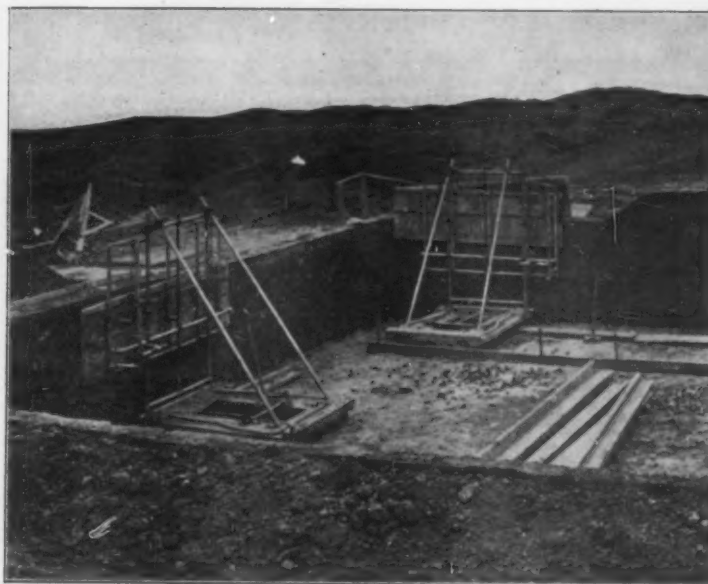
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READY TO BEGIN THE CONSTRUCTION OF A WALL.



THE MACHINE COLLAPSED FOR TRANSPORTATION.



TWO MACHINES IN ACTUAL OPERATION, BUILDING A CELLAR RETAINING WALL.

The latest improvement that has been put on this machine reduces the labor cost from 40 to 50 cents on every perch.

Immensely Successful Everywhere

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1906 MODEL

Brings forth enthusiasm from all who see it. There is so much that is new and good that no man should miss the opportunity to investigate the merits of this grand machine.

We take great pride in stating that it produces stone of more natural appearance than any other in the world. Here are a few of its chief advantages:

IT MAKES TWO STONES ON THE ONE MACHINE AT THE SAME TIME

either of the same size or different sizes. This means the saving of purchasing an extra machine and reduces your labor item to a minimum.

It makes in addition to hollow blocks of all shapes and sizes, water tables, sills, lintels, coping, ornamental stone,



No other machine in the world but the HERCULES can produce this variety, all on the one machine.

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It makes stone by the face down method, allowing the use of a two to one composition for the face of the stone and a five to one composition for the remainder. This gives you a stone with a facing that will wear like granite—not that alone, but it makes a saving in cement.

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IMPORTANT NOTICE! As we publish several catalogues of other machines, such as porch column machines, curbing and gutter machines, cement tools, etc., it is essential that you mention the above book by letter "L."

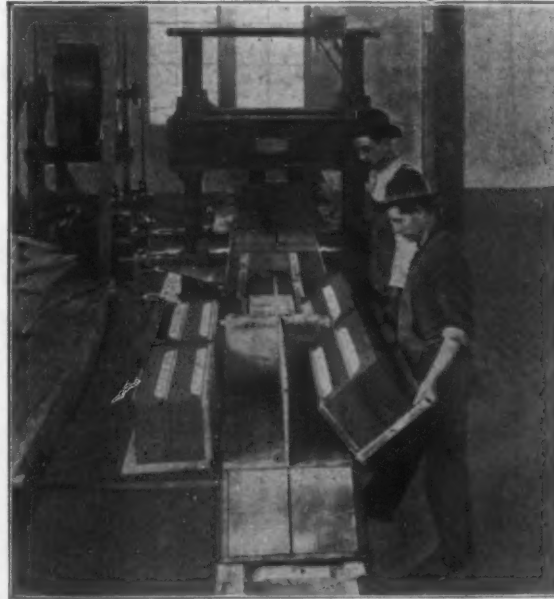
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The Fisher Hydraulic Stone System

**A Success
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This outfit consists of a genuine HYDRAULIC PRESS, and carefully constructed machinery, and has a SHIPPING WEIGHT OF 25,000 POUNDS.

The cut illustrates the Fisher machine operating and delivering eight angular blocks at one pressing, requiring less than one minute to pound them into shape, under a 200-ton pressure.



**The Only Machinery
Put Out for the Manu-
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This outfit is capable of PRODUCING 1,500 CUBIC FEET of material, formed into the shape desired, in ONE DAY'S WORK.

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Perfect Mixing

MEANS

Better Concrete

Mr. Contractor: Have you considered the importance of PERFECTLY MIXING concrete for every purpose? You should. Concrete is purely a mixture of certain materials in the right proportions. But they must be MIXED. A rapid, self-cleaning, simple, easily controlled, economical, durable machine, giving a PERFECT MIXTURE at all times is what the AMERICAN CONCRETE MIXER is.

And It is up-to-date.

A series of revolving plows do the work by which the charge is mixed from 48 to 60 times per minute. The batch does not "roll" nor "ball" with that kind of mixing.

Send for catalogue "L" for complete information.

The International Fence & Fireproofing Co.
Columbus, Ohio.

Garry's Genuine Charcoal Iron Roofing

WILL NOT RUST

If properly cared for. Roofs put on forty and fifty years ago are now good.

**Manufactured Exclusively by
THE GARRY IRON AND STEEL CO.
CLEVELAND, OHIO.**

Hand Made ——— Hard Burnt

FIRE BRICK

— are the best for —
Lime and Cement Kilns

ADDRESS

Mitchell Clay Mfg. Co.

ALL SHAPES

St. Louis, Mo.

CATALOG

Tell 'em you saw it in ROCK PRODUCTS.



HARMON S. PALMER'S LATEST INVENTION IN

Hollow Concrete Block Machines

ADVANCING THE INDUSTRY ONE HUNDRED PER CENT.

PRICES REDUCED.

THE ORIGINAL INVENTOR'S



H. S. PALMER.

Combination Automatic SELF CLOSING Block Machine

The greatest advancement since the industry was started. BLOCKS OF EVERY SIZE, LENGTH, ANGLE, HEIGHT and CONTOUR produced with astounding ease and rapidity. A MARVEL OF INGENIOUS ATTACHMENTS to the machine which has made more buildings than all infringers and imitators combined. The crystallizing of every merit in the industry to date.

Infringers Prosecuted. Many Injunctions, Many Suits Pending.

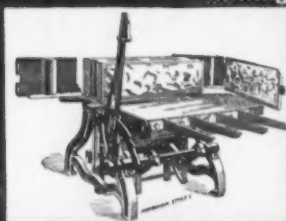
GOOD AGENTS, LIVE FACTORIES AND LAWYERS WANTED.

Harmon S. Palmer Hollow Concrete B. B. Co., Washington, D. C.

Adopted by the United States Government.

WRITE FOR CATALOGUE "T."

High Grade Concrete Block, Brick, Post and Mixing Machinery



"We Have The Leaders." "The Big 7"

1. Normandin Concrete Block Machine (Face Side)
2. Peninsular Concrete Block Machine (Face Down)
3. General Concrete Block Machine (Face Side)
4. Champion Concrete Veneer Block Machine (Face Down)
5. Favorite Sand Cement Brick Machine
6. Systematic Concrete Mixer
7. Universal Cement Line, End and Brace Post Machine

We are in the business. We can give you the best value for your money. Write us. Don't delay. Get started. Concrete

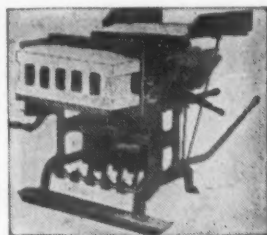
posts, blocks and brick are in demand. We solicit your trade because we can please you. Our machines are standard, adopted twice by the United States Government. Highest awards Universal Exposition, St. Louis, 1904, and Portland Exposition, 1905.

CEMENT MACHINERY COMPANY, JACKSON, MICHIGAN U. S. A.

IT IS A QUESTION OF ECONOMY

in buying a Concrete Building Block Machine the same as any thing else. You want the best, at the same time the cheapest. The **SIMPLICITY** fills both of these requirements.

Write for catalogue and further information.



"The Simplicity."

The Standard Sand & Machine Company,

Manufacturers of Labor Saving Machinery.

Address Dept. "D."

CLEVELAND, OHIO.



The Stringer Cement Block Machine

Latest Improved, Handiest, Quickest Adjusted.

Will make Blocks any size from a brick up. Water Tables, Sills, Angles, Gables, Culvert and Sewer Blocks—

HOLLOW OR SOLID.

STRINGER MACHINE CO., Jackson, Mich.

Tell 'em you saw it in ROCK PRODUCTS.

The Latest and Highest Achievement in Concrete Block Machinery

"The Winget 1906 Model"



This machine has the great distinction of being the only UNIVERSAL machine on the market. It is universal because it perfectly combines all the three different kinds of machines into ONE. It makes everything that all the others can make and a number of things they cannot make.

It is first an UPRIGHT machine, which has never been equaled in its advantage of wide range of adjustment, great speed, economy and simple operation.

It is secondly a FACE DOWN machine which excels all others in points of convenience and practicability and especially in that it gives a finished molded surface to all sides of the block, a great advantage which no other possesses.

In the third place it makes TWO-PIECE blocks, and produces two in one operation. Although it covers the widest range and the several phases, it is remarkable in that its movements are all controlled by one simple automatic lever. This machine meets with nothing but universal praise.

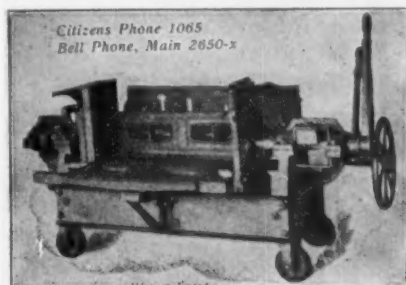
For full particulars regarding the Winget System of Concrete Machinery including power tamper and mixer, address the

**Winget Concrete Machine Co.,
COLUMBUS, OHIO.**

BRANCHES: New York Chicago St. Louis Pittsburg Los Angeles Greensboro, N. C.

THE HAYDEN AUTOMATIC BLOCK MACHINE CO.

112 West Broad Street, (P. O. Box 530.) COLUMBUS, OHIO.



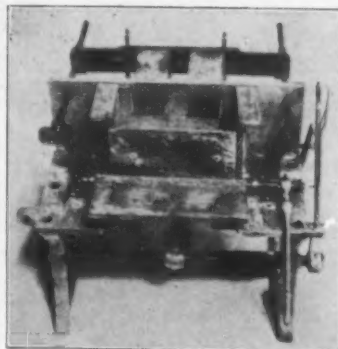
Citizens Phone 1065
Bell Phone, Main 2650-x

Simplest, most complete and swiftest machine on the market. Only perfect machine making face of block in horizontal position, producing most satisfactory work and variety of designs, impervious to moisture. All blocks released and delivered automatically to a support in front of the machine, ready to be removed for drying.

Write us for Catalogue before purchasing.

New York and Foreign Office: HAYDEN AUTOMATIC & EQUIPMENT COMPANY,
26 Cortlandt Street, New York, N. Y.

The Reed Cement Block Machinery



is superior to all others because of its rapidity, simplicity, cheapness and large range of adjustments. All others take the machines from the blocks after being manufactured. On the Reed machines the blocks are raised or turned out of the machines. All sizes of blocks produced.

Capacity in Ten Hours:

Side Face Machine, capacity	600 blocks
Down	350 "
Brick	6,000 brick

Absolutely Perfect Blocks Produced.

No cogs or gears to clog.

Write for Circulars Today.

RELIABLE AGENTS WANTED.

DOWN FACE MACHINE

The WICHITA COAL AND MATERIAL CO., Wichita, Kan.

The Walton Stone Machine

AUTOMATIC, ADJUSTABLE

MAKES DRY WELLS

Makes lengths from 4 to 32 in. and 3, 4, 5, 6, 8, 10, 12, 14 and 16 ft. radius circles, 30 and 45 degree angles. All widths by lapping blocks. All shapes, lengths and widths made on the same pallet. Reducing cores save material.

LET US TELL YOU

How we save labor, save material, save pallets, save expensive facings, save 8 cents per cubic foot over other machines by our method.

The Walton Stone Machine Co.
2500 East 18th Street, KANSAS CITY, MO.



The Standard Continuous Cement Mixer

CONTINUOUS AUTOMATIC FEED.

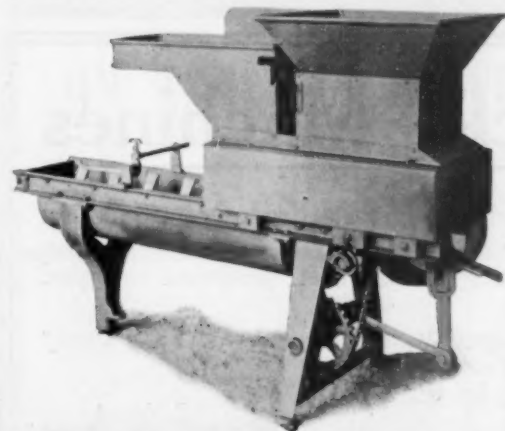
CORRECT PROPORTIONS.

Materials first Dry Mixed then "Tempered." Output instantly variable from 0 to Maximum at will of operator, thus insuring Fresh Material for each Block. See the machine in operation at the Milwaukee Convention.

Write for description and prices to

The STANDARD MACHINE CO.

KENT, OHIO





DRYERS
OF EVERY TYPE
CONSTRUCTED FOR ALL PURPOSES.
BEFORE PLACING YOUR ORDER CONSULT
UNITED STATES DRYING ENGINEERING CO.
66-70 BEAVER ST., NEW YORK, U.S.A.

W. C. WULFF & CO.

(Incorporated.)

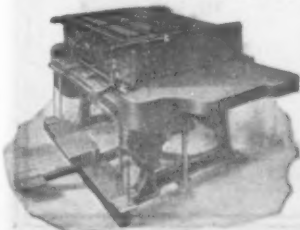
SHEET-METAL and HEATING CONTRACTORS

—MANUFACTURERS OF—

GALVANIZED IRON AUTOMATIC FIRE-PROOF WINDOWS, CORNICES, SKYLIGHTS, TANKS, ETC., SLATE, TILE, TIN AND IRON ROOFING, SHEET-METAL CEILINGS, WARM AIR FURNACES.

Office and Factory, 601, 603, 605 E. Jefferson St. LOUISVILLE, KY.

These Cuts Show Our 1906 Model No. 4 Chicago Machine.

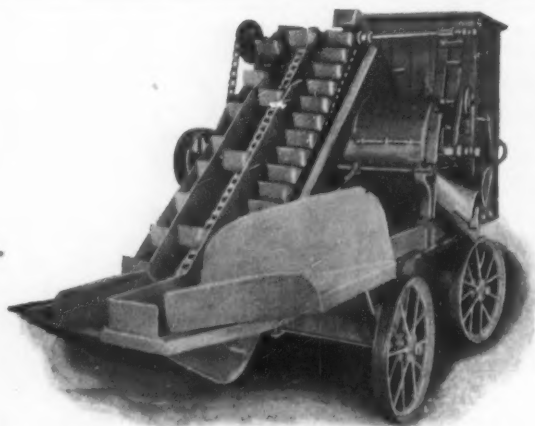


Cut on left shows rear view of machine, set to mould 3 blocks at one time, each 8 in. x 22 in. Cut on right shows 3 blocks moulded, each 8 in. wide x 22 in. long. Any size or shape of block required in ordinary building construction can be moulded on this machine. We ship our machines on approval, and send our demonstrator to start your plant, or we will pay your railroad expenses here and return to look over our line and choose what you want. We manufacture more than 20 different styles of block machines, ranging in price from \$15.00 up. We are the largest exclusive manufacturers of block machines, moulds and tools. Make us a visit and we will show you more than 40 different styles of machines. OUR FACE DOWN MACHINES HAVE NO EQUAL. If we cannot please you, we pay your railroad expenses just the same, and you are out only your time. We have machines for making any size or shape of block, and any style of air space; we have side face and face down machines. We build MACHINES, not crude, cast boxes. Since our ad. first appeared in ROCK PRODUCTS, we have sold more than 50 outfits. We have equipped more than 2,000 plants and will furnish you list of names and addresses of users of our machines on request. Send us your order for one of our \$75.00 outfits; we will ship on approval, freight paid, and if not satisfactory after five days' trial, notify us and we will remove it. Write today for our 50 page catalogue, enclose 25 cents and we will mail you formula for waterproofing and coloring blocks. We will furnish enough of our waterproofing and coloring to waterproof and color 100 sq. ft. of surface for \$1.00. State color wanted when ordering. Be sure and tell us you saw it in ROCK PRODUCTS.



Cement Machinery Manufacturing Company,

Burlington, Iowa



The **CONNOLLY**

KING OF ALL Cement and Concrete Mixers

Maximum Capacity 350 Cubic Yards in Ten Hours.
Guaranteed to Do 250.

Operating at one-half (175 cubic yards) its capacity, it furnishes a thorough and perfect 30 seconds Dry Mix of Sand and Cement, followed by a Wet Mix of all ingredients for a like period.

Fed at the ground direct from wheel-barrows it saves 50 per cent Labor in Feeding, and guaranteed to make more and better Concrete every hour than any hand fed, or fed in the air machine on earth.

Adjustable Buckets Measure Accurately the right proportion of material.

It is its own inspector and a veritable slave driver.

Portable, 14x7, operated by 6 horse power gasoline engine, and fully equipped weighs less than 3½ tons.

SEND FOR BOOKLET "D."

We also make and sell the "GRANT," the best little Mixer on the market. It has the mix of the famous **CONNOLLY**, a capacity of 25 to 40 cubic yards per day. Equipped with its 3 horse power engine weighs 2,000 lbs. Mixes Wet or Dry Concrete, and admirably adapted for Concrete Block Work.

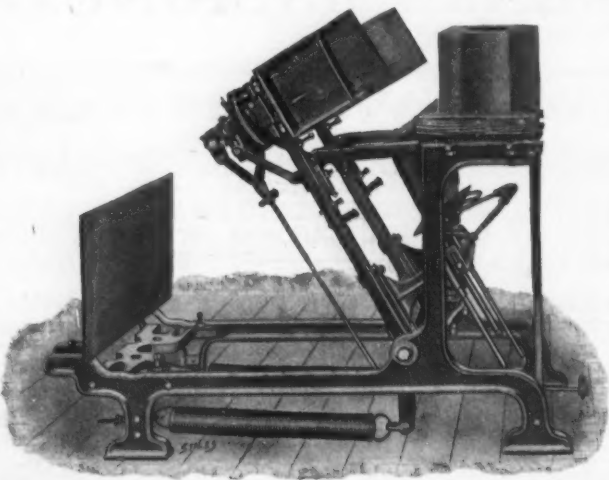
UNITED STATES CONCRETE MACHINE CO., *Majestic Building.* **Detroit, Mich.**

Automatic Building Block Machines

The wonderful development in the manipulation of cement is largely due to the degree of perfection attained by Block Machines.

The inventive mind is continually devising improvements, but nothing yet has been produced to equal our Automatic Block Machines.

The simplicity and reliability of mechanism makes it practical and speedy and blocks can be cheaply moulded into the most elaborate designs conceived by the most fastidious.



Recognizing the demand for a more dense and perfect face, our machine was especially designed to produce same, and is made to mould the block Face-Down. You are thus assured of the very best results in quality and appearance of your blocks.

Our catalogue "M" will be of material interest to you, and we would be pleased to send same on request.

Write today.



A one man Brick Machine. 1000 brick per day by one man. We ship this machine on trial. Send us not one penny. Isn't this fair? Write today for prices.

AUTOMATIC BUILDING BLOCK MACHINE CO., **130 Liberty Street, JACKSON, MICH.**

Tell 'em you saw it in **ROCK PRODUCTS.**



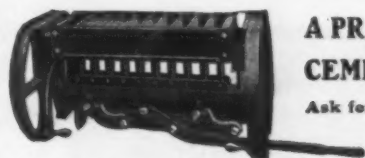
Red, Brown,
Buff and Black
**MORTAR
COLORS**



The Strongest and Most Economical in the Market.

Our Metallic Paints and Mortar Colors are unsurpassed in strength, fineness, and body, durability, covering power and permanency of color. Write for samples and quotations.

CHATTANOOGA PAINT CO., CHATTANOOGA, TENNESSEE.



**A PRACTICAL HAND TAMP
CEMENT BRICK MACHINE**

Ask for Folder D 1

On the Pallet or on the Ground

Ten brick at once, plain or each of any style, shape or design desired by using inexpensive plates or dies with returns. Arch Brick or radius any size circle. Mantel brick a specialty. Uses true concrete with facing, a savings of $\frac{1}{4}$ barrel cement to 1,000 brick. The greatest quantity, the highest quality, the largest variety for the lowest price. Let us explain with a personal letter about a new lucrative field for cement brick and why it interests the dealer in rock products.

Queen City Brick Machine Co., Traverse City, Mich.



The Sanders Brick Machine

For making sand and cement brick, sand and lime brick, any brick, all shapes and sizes. This machine makes the finest face brick of any machine on the market; every brick is perfect with fine, smoothface and sharp, square edges, every brick a pressed brick. This machine makes plain brick, ornamental brick, molded brick, all shapes and sizes, building blocks, rock face, tool face, panel face, plain face with V joint and brick face, fancy belt courses, corner blocks, combination brick cornice, fine porch columns, porch piers, lattice work, wall trimmings, chimney tops, paving blocks, archways, wainscoting and tiling for vestibules and hallways, stair steps and risers figured and paneled, for inside and outside stairs, also many figures in terracotta work can be made on this machine, and made any color by using the chemical coloring.

Two men can make 4,000 to 6,000 brick a day, $1\frac{1}{2}$ bbls. of cement to $1\frac{1}{2}$ yds. of sand will make 1,000 good brick; 2 bbls. of cement to $1\frac{1}{2}$ yds. of good, fine sand will make 1,000 fine face brick, style and variety of work unlimited. It pays every time to buy the best machine. With good sand and good cement you only need one of our machines to make the best and finest cement work that can be made. Send for our catalogue in which you will see cuts made from work on this machine—seeing is believing—it is acknowledged by experts to be the best machine on the market for cement work. Be sure that you are right, then buy our machine which makes everything right.

CATALOGUE FREE

Reading Brick Machinery Co., Office: 405 Baer Bldg., READING, PA.

ON THE HIGH WAVE OF POPULARITY.

The Ideal Hollow Concrete Block Machine.



Not a new machine. Tried and tested over two years. Satisfied users everywhere. Interchangeable to various widths. Adjustable to sixteen lengths. No wheels, cogs, gears, chains or cranks.

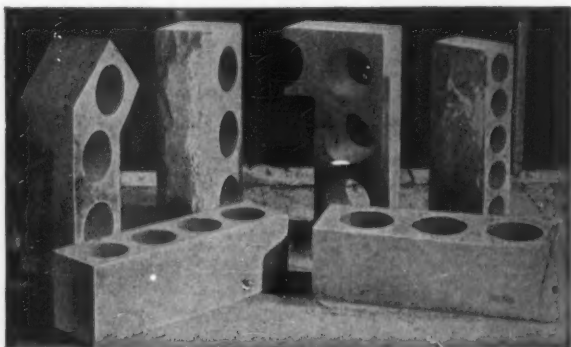


Nothing to Clog, Creak or Get Out of Order.

Simplicity, Rapidity, Adaptability, Durability. Face formed in bottom of the mold. Cores withdrawn horizontally by lever. Guaranteed Capacity—Two men, 10 hours, 200 blocks. Portable—Can be carried by two men. Over 200 in use in the State of Indiana alone. The only machine by which can be accomplished the facing of blocks by the Borst System. A business proposition to the maker of blocks. An appeal to the common sense judgment of the builder. In corresponding with us we make our business your interests.

IDEAL CONCRETE MACHINERY CO., South Bend, Ind.

Tell 'em you saw it in ROCK PRODUCTS.



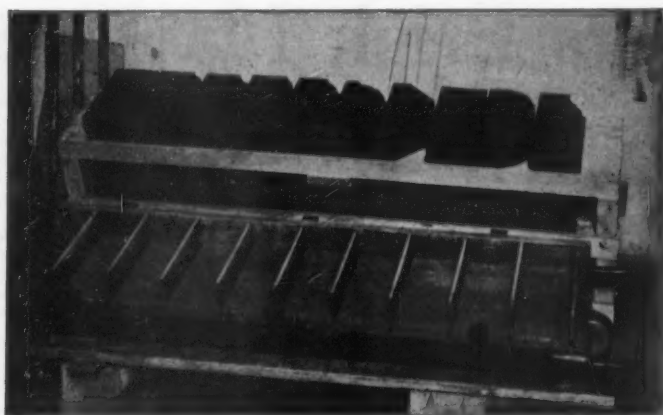
The Stevens Cast Stone Has No Rival

IT CAN BE SEEN IN THOUSANDS OF BUILDINGS

Carnegie Libraries, Churches, Schools, Bank Buildings, Business Blocks, and Dwellings. Made without tamping or pressure. Our process overcomes the two great objections to concrete blocks, viz.: the absorption of moisture and artificial appearance.

SEND FOR CATALOGUE

Stevens Cast Stone Co. 808 Chamber of Commerce
CHICAGO, : : : ILLINOIS



Here is what you have been looking for!

Cement Brick Machine

Makes 10 perfect brick per minute with two unskilled workmen.

Be your own brickmaker.

Can be changed from plain to ornamental brick or vice versa with no loss of time or extra expense.

E. W. SEAMANS,

25 Fountain Street,

GRAND RAPIDS, MICH.



MOVE THE MACHINE—NOT THE BLOCK

Saves labor of offbearing, loss by damage or breakage. Avoids necessity for heavy and expensive iron pallets. Reduces cost of plant and cost of operation. Everybody knows that concrete should not be disturbed after it is moulded or while it is setting, but this is the only machine with which it is possible.

PETTYJOHN

Blocks cost 6 cents to make—Sell for 18 cents. One man can make 200 Blocks per day. Whole outfit costs \$125.00. Figure the profits.

GUARANTEED EVERY WAY—SENT ON TRIAL

THE PETTYJOHN COMPANY

514 NORTH 9th STREET TERRE HAUTE, INDIANA



The Franklin Printing Co.,

Incorporated.

430 West Main Street,

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INQUIRIES RECEIVE PROMPT ATTENTION.

Special Cement Working Machinery

Combination Power Presses for the manufacture of cement tiles, floor tiles, sidewalk blocks, veneering stones and pressed brick.

Hand Presses for New Era cement roofing tiles, ridge rolls and cement shingles.

Stair Steps Molds, the most perfect made.

Curbstone Molds of the most improved style.

Color Mixers for colored cement work.

FURMAN CONSTRUCTION COMPANY

971-979 Bellevue Ave., DETROIT, MICH.

Sole Representatives for the United States and Canada.

Tell 'em you saw it in ROCK PRODUCTS



Smith Mixers

MORE THAN 1,200 IN USE

9 SIZES 33
62 STYLES

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509 W. 5th St.

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Fremont and Mission Sts.

"The Celebrated" BLUE BELL Wood Fibre Wall Plaster



The kind that has become Famous. There is nothing just as good, because there is nothing like it. "Blue Bell" Wood Fibre Plaster is as much superior to the so called Wood Fibre Plaster as Portland Cement is superior to lime. We use no kolin, clay, lime, dirt or other injurious materials in our plaster. We install complete Plants in any part of the United States or Canada. Our machinery fully patented. The following plants are manufacturing "Blue Bell," and all were installed since March 1, 1905.

Savannah Stone and Plaster Co., Savannah, Ga.; Columbia Wood Fibre Plaster Co., Columbia, S. C.;
Greensboro Wood Fibre Plaster Co., Greensboro, N. C.; Worcester Wood Fibre Plaster Co., Worcester, Mass.
The Butler Wood Fiber Plaster Co., Butler, Pa.

If you are looking for a good paying business, write to us today.



Concrete Engineering and Equipment Co.,

BUTLER, PENNSYLVANIA.

GREENSBORO, N. C.

SPECIAL MACHINERY AND FORMULAS

FOR THE MANUFACTURE OF

WOOD FIBER PLASTER, FIRE PROOF-
ING AND KINDRED PRODUCTS.

The Ohio Fiber Machinery Co.

J. W. VOGLESONG,
GENERAL MANAGER.

Elyria, Ohio.

We furnish the latest improved FIBER MACHINE, (fully patented),
also FORMULAS, on a reasonable proposition. The strongest compa-
nies and oldest manufacturers are operating under my contracts.
WRITE FOR TERRITORY.

STONE WALL PLASTER

Manufactured and sold.

A. B. MEYER & CO., INDIANAPOLIS, IND.

Meyers German Cement

Repairs Stone of Every Kind.

Used by many leading Stone men, and is the BEST PREPAR-
ATION IN THE WORLD. Write for particulars.

LELAND & HALL CO., 557 Fifth Avenue, NEW YORK, N. Y.

Tell 'em you saw it in ROCK PRODUCTS.

**FLEXIBLE
ELASTIC
FIRE PROOF**

**ORR'S
"MASTIC" BRAND**
PATENTED AND GUARANTEED

**NO SAND
NO LIME
NO HAIR**

"Mastic" Wood Fiber Wall Plaster is the restoration of one of the lost arts. To produce plaster without the use of sand, lime or hair is very novel yet this is what genius has accomplished—"Pozzuolana Product." For strength, durability, easy working, it has no equal. "MASTIC" is endorsed by architects, builders and contractors alike as the ideal wall covering. Full plans for equipping new mills furnished with territory rights. Patents on machinery and formula process. Owned and controlled by W. H. ORR, Secretary and Manager of the

MASTIC WOOD FIBER PLASTER CO.

MAIN OFFICE: 607 State Life Building, INDIANAPOLIS, IND.
FACTORY OFFICE AND WORKS: 1705 West Washington Street.

METAL LATH

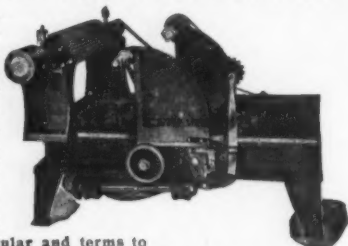
Bostwick Expanded Metal BOSTWICK FIRE-PROOF STEEL LATH

For Plaster Walls and Ceilings, Concrete Reinforcement. Our Flat Lath the Stiffest and Most Economical Metal Lath on the Market.
WRITE FOR SAMPLES AND PRICES.

BOSTWICK STEEL LATH CO.,
NILES, OHIO.

THE LEONARD WOOD FIBER MACHINE

Has an Automatic, Proportional, Increasing Feed, which keeps grade of fiber uniform from start to finish, and holds machine to highest possible rate of production for the grade of fiber and number of saws. Does not begin with fiber and end with dust, nor fall off in rate of production on each log, from 40 to 80 per cent. as do the ordinary non-increasing feed machines. Works logs up to 24 x 24 inches. No royalty string attached to sale. Pay no attention to misrepresentations of our competitors but write for descriptive circular and terms to



THE ELYRIA MACHINE WORKS, Elyria, Ohio.

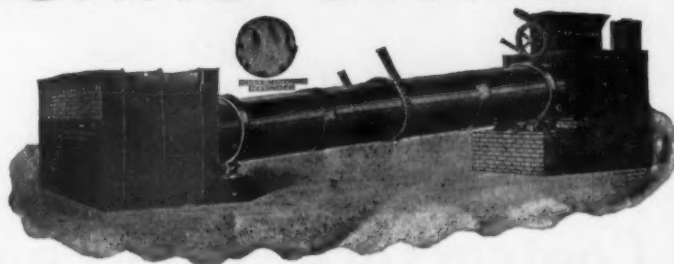
ELYRIA MACHINE WORKS, Elyria, Ohio.

Gentlemen:—We are very much pleased with your machine, as is evidenced by the fact that we are ordering the second one from you. This last machine will take the place of a machine, which we have found takes more power to run, with about one-third the output of your machine.

Yours truly,

S. A. WALKER, Vice Pres.,
Acme Cement Plaster Co., St. Louis, Mo.

SAND DRYER



Dryers, Screens, Elevating and Conveying Machinery, Mixers, Concrete Building Block Machinery of all kinds, Power Tampers, Etc.
Ask for catalogue and prices.

The Standard Sand and Machine Company,
CLEVELAND, OHIO.

WOOD PLASTER

The Coming Wall Covering

WE ARE THE ORIGINATORS.

After several years of experimental work we have reached **SUCCESS** and our goods are recognized as of the highest quality.

We wish to establish our trade in every important market, and will give local capital and local talent an opportunity to go in with us in the erection and operation of

MIXING PLANTS

Using our **IMPROVED MACHINERY and FORMULAS.**
The management of the local plant to remain with **LOCAL INTERESTS.**

Write us for full information.

The **ELYRIA WOOD PLASTER CO., Elyria, Ohio.**

THAT'S IT

The Brand that's
in Demand.

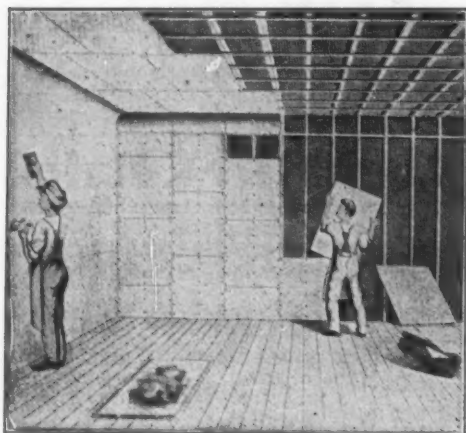


The New
Independent Mill.

Cement Plaster.

MANUFACTURED BY

The Plymouth Gypsum Co. FORT DODGE, IOWA.



Sackett Plaster Board

A material used in the construction of Walls and Ceilings in place of wood and metal lath. Made in Sheets 32" x 36", 1/4" thick. Nailed directly to studding and finished with hard plaster.

Sackett Plaster Board is light, economical and durable. Will not warp, buckle or shrink. Is warmer than lath, consequently saves fuel. Is a fire retardant recognized by fire underwriters.

Walls and Ceilings constructed with these boards cannot fall.

GRAND RAPIDS PLASTER CO.

Manufacturers of Wall Plasters,
Calcined Plasters and other Gypsum Products.

WESTERN SALES AGENT.

GRAND RAPIDS, MICH.

Tell 'em you saw it in **ROCK PRODUCTS.**

H. L. Graf, Pres. E. T. Slider, Vice-Pres. & Gen'l Mgr. Osborne G. Reilly, Sec. & Treas.

New Albany Wall Plaster Co.

(Incorporated.)

MANUFACTURERS OF

Star and Wood Fiber Wall Plaster.

NEW ALBANY, IND.

We wish to announce to the trade that we are now running and at the present time, are in position to fill all orders promptly. Those who have used our goods claim it is the finest they ever had.

If you have not tried it, we are sure it would be to your interest to do so.

Prices always right and your orders solicited.

NEW ALBANY WALL PLASTER CO.,

NEW ALBANY, IND.

Cumberland Phone 408.
Home Phone 137.

THE COLOR QUESTION "SETTLED"

RICKETSON'S MINERAL COLORS

STRONGEST MADE, STOOD THE
TEST FOR 18 YEARS.
NEVER FADE.

*The Universal Exposition, St. Louis, 1904, gave us the
Highest Award—can we add more?*

Red, Brown,
Buff, Purple, Black.
For Clay, Cement Brick,
Building Blocks, Mortar, etc.

Ricketson Mineral Paint Works
MILWAUKEE, WIS.

C. SHARP, Phone C, 898.

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SHARP BROS. CO.

MANUFACTURERS OF

Buckeye Wall Plaster

Dealers in Builders' Supplies, Lime, Hair, Plaster of Paris, Etc.

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PREVENT DAMPNESS

—BY USING—
"STONE PRESERVATIVE"

CEMENT, STONE, BRICK, CONCRETE, ETC.

No heating required. No discoloration of surface. No injury to Stone.
Furring strips unnecessary. Thousands of gallons used.

HUNKINS-WILLIS LIME AND CEMENT CO.
Specialty Department ST. LOUIS, MO

WHEELING WALL PLASTER CO.,

MANUFACTURERS AND JOBBERS

Wheeling Plaster and Builders Supplies.

WHEELING, - - WEST VIRGINIA.

PURE CARBONATE OF LIME FOR ASPHALTING.

We also manufacture Eichel's Blue River Lime.

We have low freight rates to all points.
Can make prompt shipments. Ground
to any fineness. Let us send you sample.
Quarries, Milltown, Indiana, on
Southern Railway.

EICHEL LIME & STONE COMPANY,
General Office, Eichel Block, EVANSVILLE, IND.

ANALYSIS OF OOLITE STONE

found in quarries of Eichel Lime &
Stone Co., as made by Mr. W. S.
Blatchley, Indiana State Geologist.

Calcium Carbonate. 98.91
Iron Oxide and Aluminum.15
Magnesia Carbonate.68
Insoluble Hydrochloric Acid.48

100.17

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PLAIN AND IN COLORS FOR WALLS AND CEILINGS.

Patent Soapstone Mortar.

Prepared in any Color for Laying Pressed and Enamelled Brick,
Stone Fronts, Terra Cotta, Chimneys, Fire Places, Etc.

The Dodge Blackboard Material or Artificial Slate.

The Potter Blackboard Material.

SOAPSTONE MICA. CONCRETE DRESSING.
CRUSHED, GROUND AND BOLTED SOAPSTONE.

AMERICAN SOAPSTONE FINISH CO.

W. P. DODGE, Proprietor. CHESTER DEPOT, VT.

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Our Stucco Retarder is both
strong and uniform, and will
not deteriorate with age.

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Incorporated 1895.

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Lowest Special Homeseekers' Rates

EVER MADE TO

Oklahoma, Indian Territory and Texas
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Louisville, Henderson & St. Louis Railway

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RETARDER	RETARDER RETARDER RETARDER	RETARDER RETARDER	RETARDER RETARDER RETARDER	RETARDER
EE TT AA RR DD EE RR	<p>Where Can We Buy the BEST RETARDER?</p> <p>OF THE</p> <p>BINNS STUCCO RETARDER CO.</p> <p>Their Retarder is both strong and uniform. It is manufactured on honor and sold on its merits. They will tell you all about Wall Plaster formulas for the asking.</p> <p>UHRICHSVILLE, - - - OHIO, U. S. A.</p>			EE TT AA RR DD EE RR
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FULLY EQUIPPED

Sand Lime Brick Plant for Sale

At a Bargain.

Inventory and Appraisement of Real Estate, Machinery, Etc., property of the Union Sandstone Brick Co., now in the hands of The Tippecanoe Loan and Trust Co., of Lafayette, Indiana, Receiver:

1-1 office desk.....\$ 1 50	29-1 15" sprocket wheel..... 50	57-1 hat, shifting pulleys and hangers..... 100 00	89-2 hangers, iron..... 3 00
2-2 office chairs..... 25	30-1 iron pump..... 2 50	58-1 hat belting..... 50 00	90-16 iron mixing paddles..... 1 00
3-1 oil tank with pump, about 30 gal. of engine oil..... 5 75	31-1 wheelbarrow..... 50	59-1 lime grinder..... 150 00	91-1 18" monkey wrench..... 75
4-1 oil tank with pump, about 50 gal. of cylinder oil..... 9 50	32-2 picks..... 50	60-1 lime and sand measuring machine..... 75 00	92-1 sifting machine..... 10 00
5-1 box Arctic Cup Grease, 25 lbs..... 1 25	33-1 100-horse power boiler, with 60 ft. stack..... 800 00	61-1 16-ft. mixing machine..... 150 00	93-1 8" belt elevator, complete..... 60 00
6-2 boxes acid for chemical engine..... 3 00	34-1 Peerless Register Gauge..... 25 00	62-2 16" 12 coil radiators..... 8 16	94-1 8" belt elevator, complete..... 22 50
7-50 lbs. soda for chemical engine..... 1 50	35-1 grinding machine..... 25 00	63-3 joints, 1 1/2" steam pipe..... 3 65	95-1 12" belt elevator, complete..... 120 00
8-8 lbs. Rainbow Packing..... 4 00	36-1 Cook deep well pump..... 75 00	64-3 joints 2" steam pipe..... 2 97	96-1 12" belt conveyor, complete..... 18 00
9-13 lbs. black rubber packing..... 1 60	37-1 boiler feeding pump..... 25 00	65-2 joints 2" steam pipe..... 1 53	97-1 12" belt conveyor, complete..... 16 50
10-3 1/2 lbs. lace leather..... 75	38-1 50-horse power Atlas engine..... 250 00	66-1 joint 2" steam pipe..... 1 62	98-1 portable forge..... 7 50
11-6 lbs. engine and pump packing..... 3 00	39-1 boiler feed water heater..... 40 00	67-1 6" x 20" iron pulleys..... 1 85	99-1 wheel barrow..... 2 00
12-21 ft. packing for hardening cylinder..... 4 00	40-1 250 gal. chemical engine with 200 ft. 1 in. hose..... 200 00	68-1 4x18" wood pulley..... 1 00	100-1 9x10 ft. water tank, (wood)..... 50 00
13-4 16-in. gauge glasses..... 60	41-1 heating stove..... 1 00	69-1 1,000 lb. scale..... 5 00	101-1 transfer car..... 10 00
14-1 14x16 round brush bearing and sprocket wheel..... 5 00	42-1 2-gal. chemical engine..... 2 00	70-1 car pulling machine..... 50 00	102-1 jack screw..... 1 50
15-48 feet 8-in. dbl. leather belt..... 45 00	43-1 pr. belt clamps..... 1 50	71-1 6"x30" iron pulley..... 3 10	103-2 turn tables..... 50 00
16-55 feet 12-in. dbl. canvas belt..... 24 75	44-6 grate bars for boiler..... 3 75	72-1 8"x30" iron pulley..... 3 90	104-120 ft. lime car track..... 10 00
17-1 hot pipe fittings..... 1 00	45-2 buck staves..... 75	73-1 6"x20" iron pulley..... 1 85	105-250 ft. brick car track..... 56 25
18-1 hot 1 1/2 El. bolts (about 200)..... 1 00	46-1 hot pipe, valves and fittings, to connect steam plant..... 15 00	74-1 4"x12" iron pulley..... 90	106-About 160,000 brick on yard..... 640 00
19-7 lanterns..... 1 75	47-2 sets extra brick dies for brick press..... 25 00	75-1 3"x22" wood pulley..... 1 30	107-About 2,000 ft. of old lumber..... 20 00
20-1 8-lb. sledge hammer..... 1 25	48-1 16-ft. coil radiator..... 5 76	76-2 8"-7"-5"-3" step cone pulleys..... 2 00	108-1 sand loader..... 75 00
21-1 2-foot level..... 1 00	49-1 water measuring tank..... 2 00	77-1 bench vice..... 1 60	109-1 8-room dwelling house and barn, and 2 acres land..... 2,700 00
22-2 coal oil cans..... 50	50-50 ft. 2" cotton fire hose..... 12 50	78-1 pipe..... 2 00	110-1 main building at plant, about 30x40..... 1,500 00
23-1 watchman's control clock..... 15 00	51-1 4,000 lb. Harrington hoist..... 20 00	79-2 sets Armstrong pipe dies..... 7 50	111-1 small office building..... 50 00
24-2 16-foot 16 coil radiators..... 14 08	52-1 6x50 ft. hardening cylinder..... 1,500 00	80-1 set Green River bolt dies..... 4 50	112-1 storage shed, 55x100..... 400 00
25-1 counter scale..... 1 00	53-40 brick cars..... 1,000 00	81-1 net cutter..... 75	113-Company's equity in R. R. switch to plant..... 2,700 00
26-1 2 1/2 in. x24 fly wheel, with 2" 6" 2" shaft..... 75	54-30 lime cars..... 500 00	82-1 ratchet drill..... 1 25	114-Book account of J. C. Boonstra..... 34 96
27-1 24" x 6" x 15-16 iron pulley..... 2 50	55-2 brick wheelbarrows..... 6 00	83-1 hack saw..... 50	115-Book account of J. F. Bellinger..... 12 25
28-1 1 1/2 16-16" shaft, 3 feet long..... 50	56-1 Berg brick press..... 2,000 00	84-1 wood saw..... 25	116-Book account of Samuel C. Moore..... 6 00
		85-2 small oil cans..... 30	
		86-1 hot iron, hangers, shafts, etc..... 3 00	
		87-100 lbs. track spikes..... 1 50	
		88-4 sprocket wheels, iron..... 1 00	

\$14,004 73

Plant was completed a little over one year ago, has a magnificent sand proposition in connection, (which alone, is worth more than the entire plant will cost you) and has turned out some very excellent sand-lime brick. Mismanagement and discontent among the stockholders brought about the receivership and sale—all of which operates to the advantage of the purchaser.

This bargain is open to the man with money who recognizes a good thing and grasps the opportunity promptly.

Railway Switch enters Company's grounds, extending direct to plant, and offering every facility for prompt shipment.

A WORD ABOUT LAFAYETTE.

Lafayette is a city of 25,000 inhabitants, situated on the banks of the Wabash river, 64 miles by rail from the Capital of State. It is rated as the second wealthiest city in the Union, per capita of population, affording a profitable home market, superior to any other in the country by reason of prospective improvements. It has the finest system of water works in the country. It is amply supplied with railroads and shipping facilities. The Wabash Railroad; the Cincinnati, Cleveland, Indianapolis and Chicago Railroad (the Big Four); the Lake Erie and Western; and the Monon Railroad,

all take on and deliver passengers and freight at this point. The Indianapolis and Northwestern Interurban line runs into this city, and other traction lines are being contemplated. Lafayette is the home of Purdue University, the greatest technical school in the country to-day, with its 1,800 to 2,000 students, the number rapidly increasing each year. The Indiana State Soldiers' Home, with its 800 veterans, is located on the west side of the Wabash river, three miles above Lafayette. We have the finest school system, the greatest number and the handsomest churches of any city of like size in

the West. The Sterling Electric Works, the Duncan Meter Works, the Indiana Wagon Works Co., the Lafayette Stove and Foundry Co., the Monon Shops, the finest equipped strawboard plant, in the United States, are some of the public enterprises now in operation here, and details are now under consideration for the establishment here of an extensive factory for the manufacture of watches. There is ample banking facilities, represented by five national banks, two trust companies, savings banks, two State banks, and a liberal community.

TERMS OF SALE.

Sealed Bids will be received to January 15, 1906, at 10 o'clock a. m., at which time all bids will be opened at our office, corner Third and Columbia Streets, Lafayette, Indiana, and the highest bid, accompanied with cash or certified check, will be accepted, subject to the approval of Court. Address all communications to

Tippecanoe Loan and Trust Co., Receiver, Lafayette, Indiana

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Sand-Lime Brick Machinery

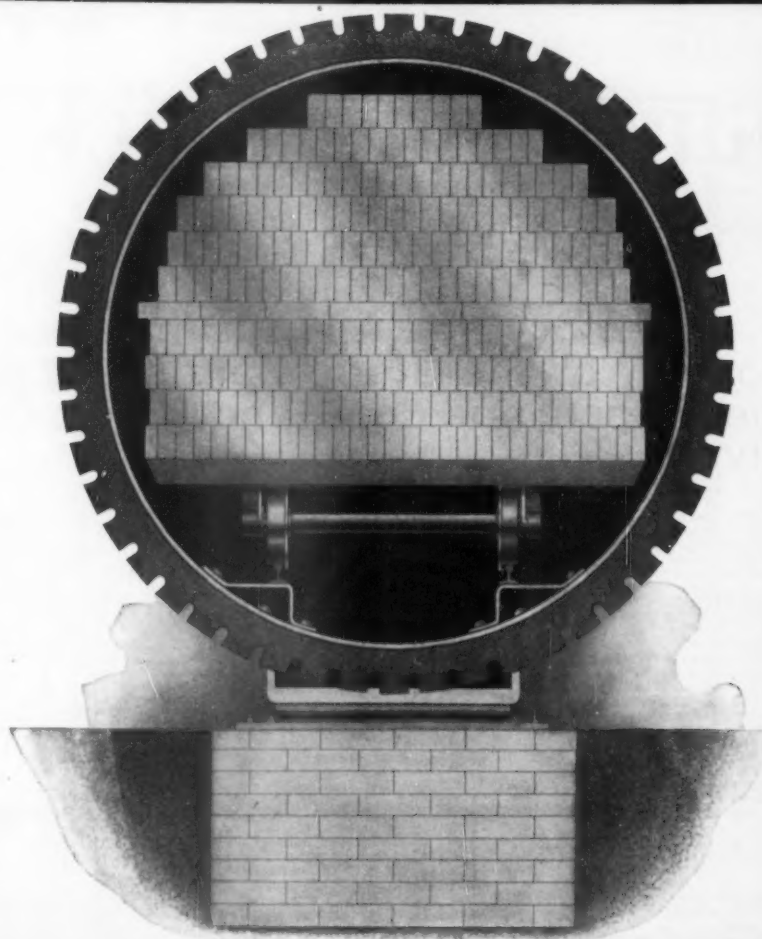
Our Sand-Lime Brick Machinery is at least a little better than any other. We have testimonials to show it. We build it all in our own factory and are sure of its quality. We are the only firm doing this. We will design and equip your entire plant or will sell you parts of your equipment. Our catalog describing and illustrating our full line will be sent upon request.

We also build a full line of machinery and appliances for making Clay Products, Cement and Pottery, Dryers and Dryer Apparatus.

Everything we sell we make. We therefore know its quality to be right.

THE AMERICAN CLAY MACHINERY CO.

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Sand-Lime-Brick Plants FULLY UP-TO-DATE

Every New Principle and Appliance Supplied

WOULD you not rather buy from a firm which builds everything that goes into the plant, and stands back of its quality than from a firm that farms out a good proportion of the contract? Give us the location, we do the rest and you have no worry, either during the building of the plant or after it is started. Our plants go right. Our experience in the business started with one of the first plants installed. Our machinery is automatic. Our products uniform. Our capacity exceeds our claims. Write to us and get many good pointers.....

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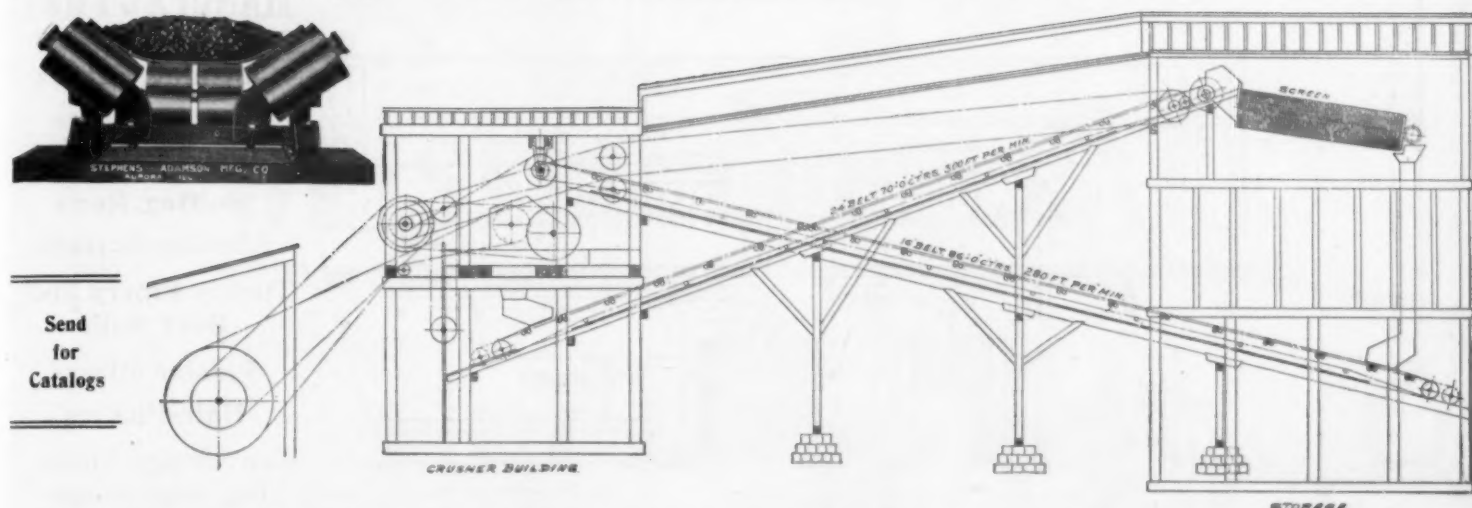
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From Crusher to Screen, From Screen to Crusher



Showing a system of S-A BELT CONVEYORS installed for the American Lime and Stone Company of Pennsylvania, one of the largest concerns in the country engaged in the manufacture of crushed stone, lime, etc. In this plant one large crusher and one of smaller capacity are located in the crusher building. From the large crusher the stone is delivered to an S-A BELT CONVEYOR, 24 inches wide, running to the screen in the Storage Building. The crushed stone delivered from the screen drops into the bins and the large pieces that do not go through the perforations are carried over the end of the screen, dropped through a spout, then on a 16-inch S-A BELT CONVEYOR which carries it back to the small crusher, which also discharges to the 24-inch Conveyor.

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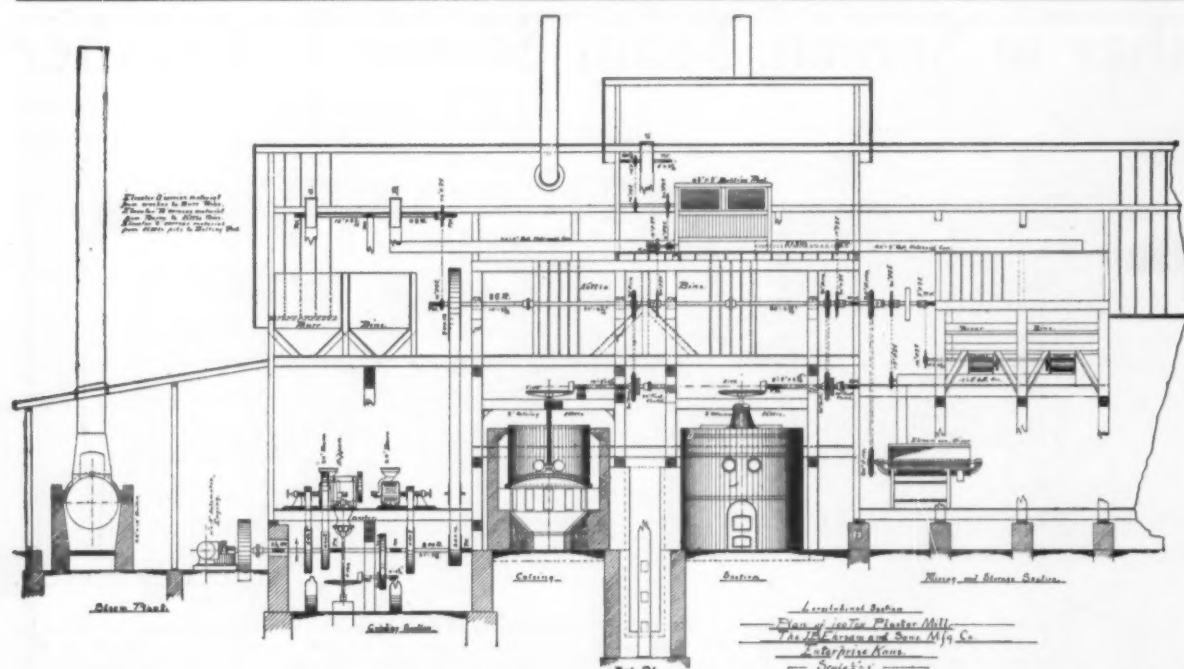
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We are prepared to submit plans and estimates for the complete equipment of wall plaster mills, and furnish all machinery required of our own manufacture and design. **Special Machinery to meet special requirements.** Twenty years experience in building and equipping Wall Plaster Mills. New Catalogue in press. Write for a copy. Address

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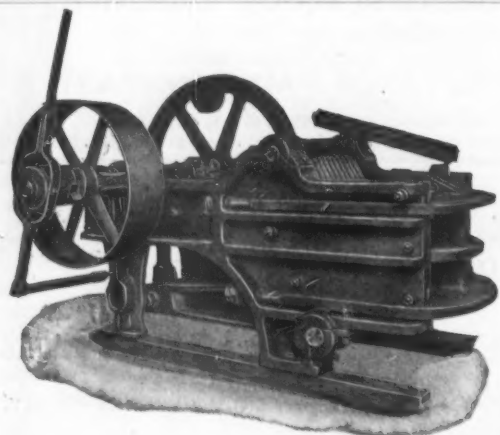
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We make a complete line, including
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That's the Double Impression we aim
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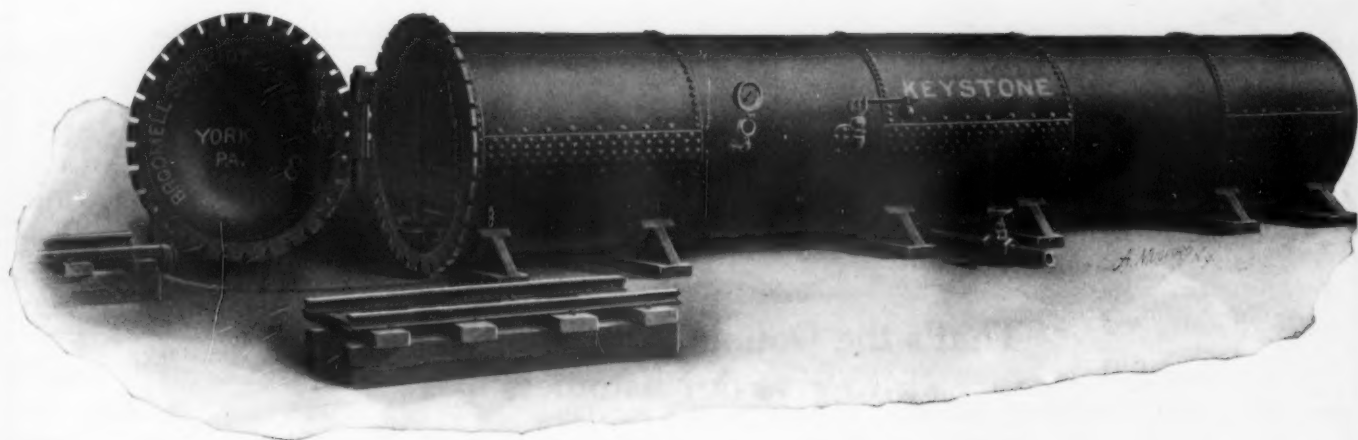
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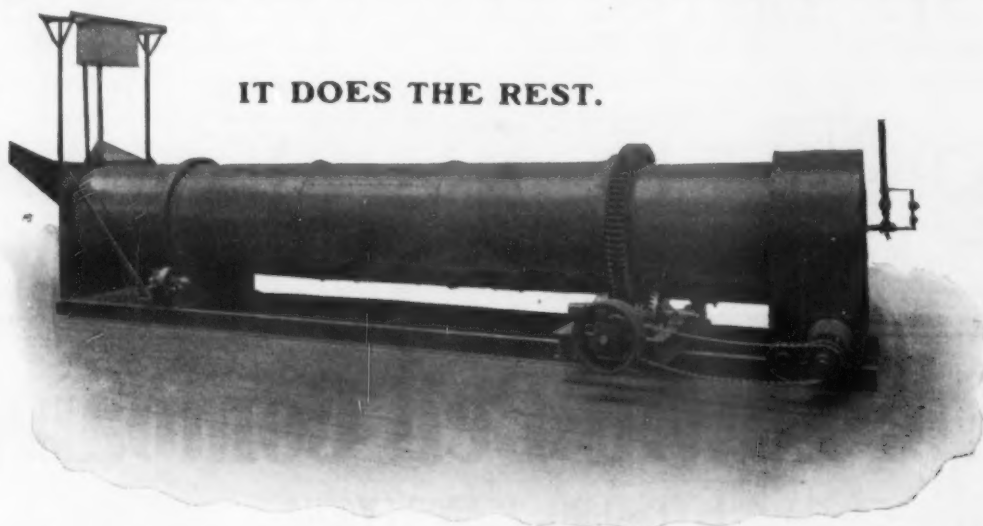
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SIMPLEST, CHEAPEST, BEST—CONTINUOUS, AUTOMATIC PROCESS.



IT DOES THE REST.



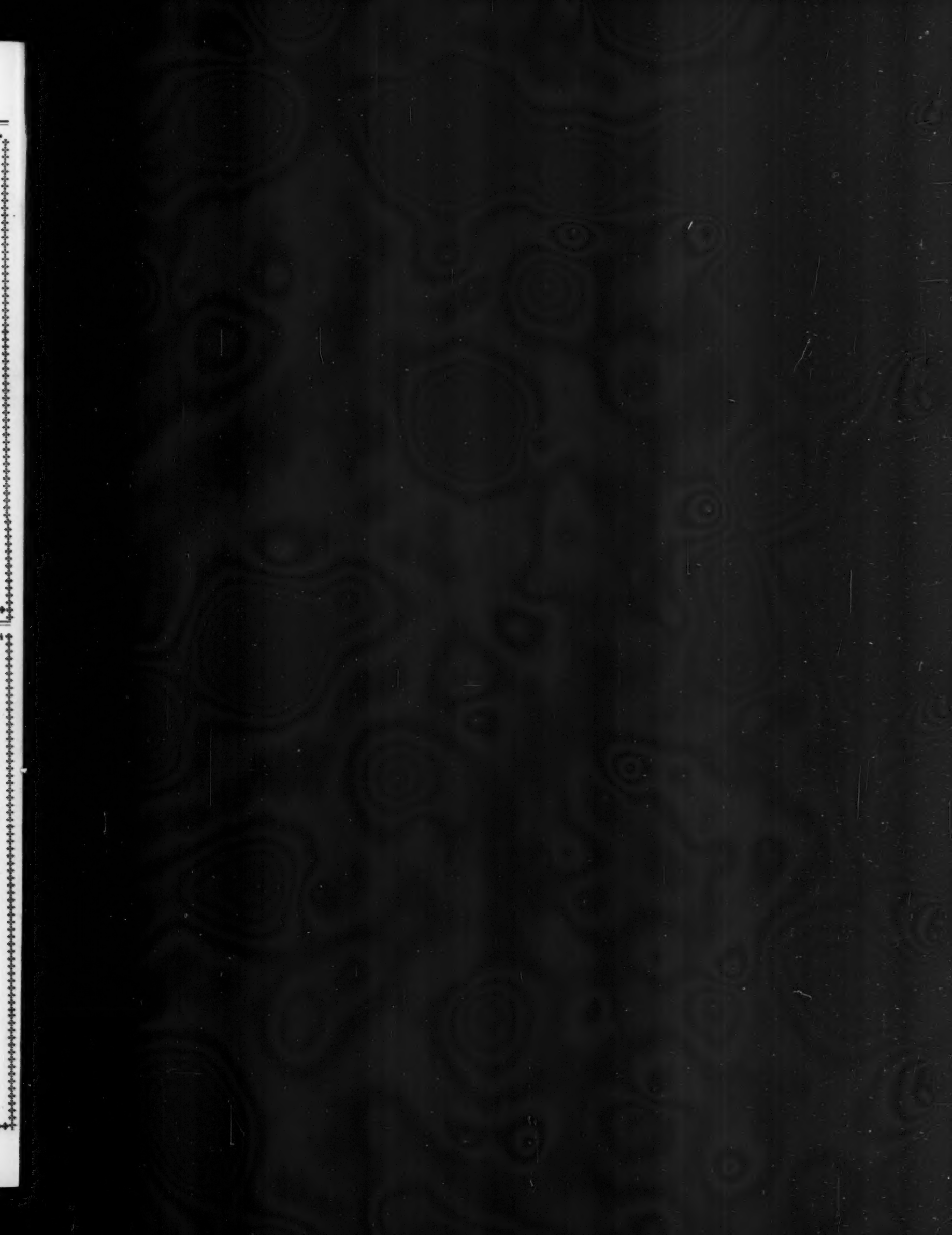
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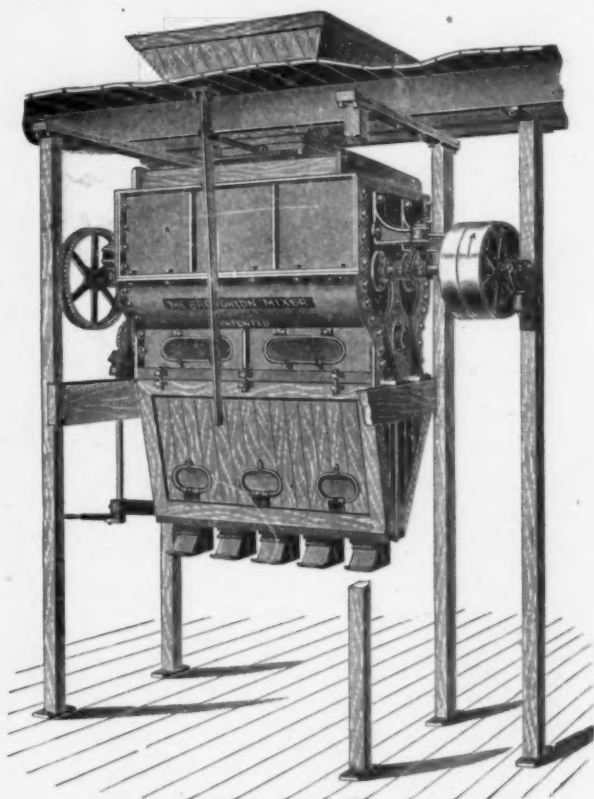


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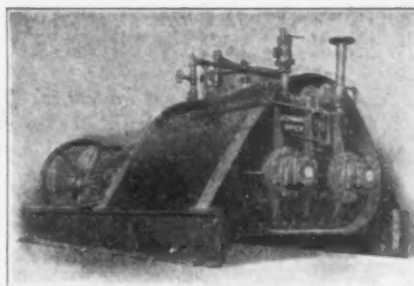
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Mixers of Plaster, Cement and
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Our Preparing Machine **RELIANCE**
CORRECTLY proportions and PROPER-
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of HIGH QUALITY. This machine may
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IT WILL PAY YOU

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It is the only system which absolutely
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thoughts are devoted to the design and
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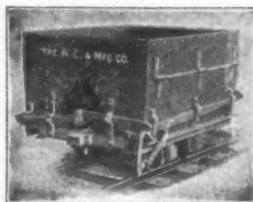
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**Sewer Pipe,
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All Sizes Sewer Pipe, 2 inches to 36 inches Inclusive.

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